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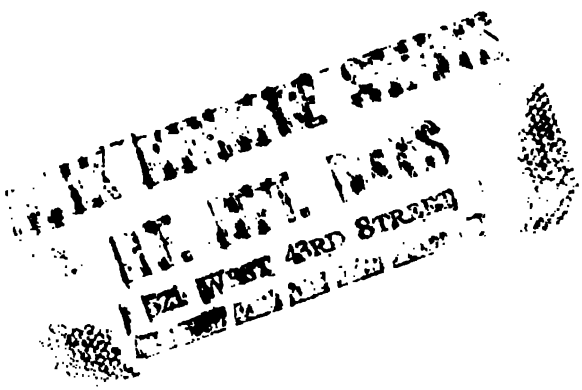

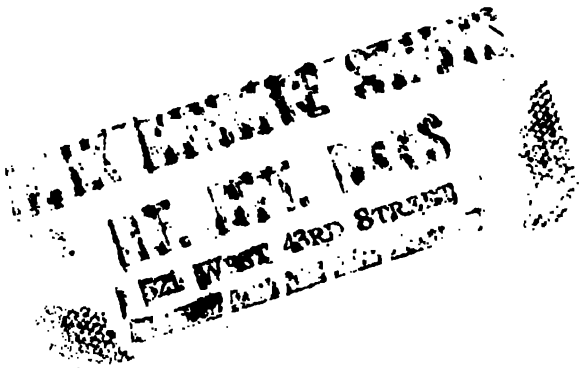

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CHAPTER X.

ON SYMPATHY AND SENSIBILITY.

THE artleſs expreſſions of ſympathy and ſenſibility in children are peculiarly pleaſing; people who, in their commerce with the world, have been diſguſted and deceived by falſehood and affectation, liſten with delight to the genuine language of nature. Thoſe who have any intereſt in the education of children have yet a higher ſenſe of pleaſure in obſerving ſymptoms of their ſenſibility; they anticipate the future virtues which early ſenſibility ſeems certainly to promiſe; the future happineſs which theſe virtues will diffuſe. Nor are they unſupported by philoſophy in theſe ſanguine hopes. No theory was ever developed with more ingenious

elegance, than that which deduces all our moral ſentiments from ſympathy. The direct influence of ſympathy upon all ſocial beings is ſufficiently obvious, and we immediately perceive its neceſſary connexion with compaſſion, friendſhip, and benevolence; but the ſubject becomes more intricate when we are to analyſe our ſenſe of propriety and juſtice; of merit and demerit; of gratitude and reſentment; ſelf-complacency or remorſe; ambition and ſhame*.

We allow, without heſitation, that a being deſtitute of ſympathy could never have any of theſe feelings, and muſt conſequently be incapable of all intercourſe with ſociety; yet we muſt at the ſame time perceive, that a being endowed with the moſt exquiſite ſympathy muſt, without the aſſiſtance and education of reaſon, be, if not equally incapable of ſocial intercourſe, far more dangerous to the happineſs of ſociety. A perſon governed by ſympathy alone muſt be influenced by the bad as well as by the good paſſions of others; he muſt feel reſentment with the angry man; hatred with the malevolent;

* Adam Smith.

jealouſy with the jealous; and avarice with the miſer: the more lively his ſympathy with theſe painful feelings, the greater muſt be his miſery; the more forcibly he is impelled to action by this ſympathetic influence, the greater, probably, muſt be his imprudence and his guilt. Let us even ſuppoſe a being capable of ſympathiſing only with the beſt feelings of his fellow-creatures, ſtill, without the direction of reaſon, he would be a nuiſance in the world; his pity would ſtop the hand, and overturn the balance of juſtice; his love would be as dangerous as his pity; his gratitude would exalt his benefactor at the expence of the whole human race; his ſympathy with the rich, the proſperous, the great, and the fortunate, would be ſo ſudden, and ſo violent, as to leave him no time for reflection upon the conſequences of tyranny, or the miſeries occaſioned by monopoly. No time for reflection, did we ſay? We forgot that we were ſpeaking of a being deſtitute of the reaſoning faculty! Such a being, no matter what his virtuous ſympathies might be, muſt act either like a madman or a fool. On ſympathy we

cannot depend either for the correctneſs of a man's moral ſentiments, or for the ſteadineſs of his moral conduct. It is very common to talk of the excellence of a perſon's heart, of the natural goodneſs of his diſpoſition; when theſe expreſſions diſtinctly mean any thing, they muſt refer to natural ſympathy, or a ſuperior degree of ſenſibility. Experience, however, does not teach us, that ſenſibility and virtue have any certain connexion with each other. No one can read the works of Sterne, or of Rouſſeau, without believing theſe men to have been endowed with extraordinary ſenſibility; yet who would propoſe their conduct in life as a model for imitation? That quickneſs of ſympathy with preſent objects of diſtreſs, which conſtitutes compaſſion, is uſually thought a virtue, but it is a virtue frequently found in perſons of abandoned character.

"Should any one of us," ſays Mandeville*, "be locked up in a ground room, where in a "yard joining to it there was a thriving good-"humoured child at play, of two or three years

* Eſſay upon Charity Schools.

" old, ſo near us that through the grates of the
" window we could almoſt touch it with our
" hands; and if, whilſt we took delight in the
" harmleſs diverſion, and imperfect prattle, of
" the innocent babe, a naſty, overgrown ſow
" ſhould come in upon the child, ſet it a ſcream-
" ing, and frighten it out of its wits; it is na-
" tural to think that this would make us un-
" eaſy, and that with crying out, and making
" all the menacing noiſe we could, we ſhould
" endeavour to drive the ſow away. But if this
" ſhould happen to be an half-ſtarved creature,
" that, mad with hunger, went roaming about
" in queſt of food, and we ſhould behold the
" ravenous brute, in ſpite of our cries, and all
" the threatening geſtures we could think of,
" actually lay hold of the helpleſs infant, de-
" ſtroy, and devour it;—to ſee her widely open
" her deſtructive jaws, and the poor lamb beat
" down with greedy haſte; to look on the de-
" fenceleſs poſture of tender limbs firſt trampled
" upon, then torn aſunder; to ſee the filthy
" ſnout digging in the yet living entrails, ſuck
" up the ſmoaking blood, and now and then to

" hear the crackling of the bones, and the cruel
" animal grunt with ſavage pleaſure over the
" horrid banquet; to hear and ſee all this what
" torture would it give the ſoul beyond expreſ-
" ſion! * * * * * * * * * * *
" Not only a man of humanity, of good mo-
" rals, and commiſeration, but likewiſe an high-
" wayman, an houſebreaker, or a murderer,
" could feel anxieties on ſuch an occaſion."

Amongſt thoſe monſters, who are pointed out by hiſtorians to the juſt deteſtation of all mankind, we meet with inſtances of caſual ſympathy and ſenſibility; even their vices frequently prove to us, that they never became utterly indifferent to the opinion and feelings of their fellow-creatures. The diſſimulation, jealouſy, ſuſpicion, and cruelty of Tiberius, originated perhaps, more in his anxiety about the opinions which were formed of his character, than in his fears of any conſpiracies againſt his life. The " *judge within,*" *the habit of viewing his own conduct in the light in which it was beheld by the impartial ſpectator,* prompted him to new crimes; and thus his unextinguiſh-

ed ſympathy, and his exaſperated ſenſibility, drove him to exceſſes, from which a more torpid temperament might have preſerved him*. When, upon his preſenting the ſons of Germanicus to the ſenate, Tiberius beheld the tenderneſs with which theſe young men were received, he was moved to ſuch an agony of jealouſy as inſtantly to beſeech the ſenate that he might reſign the empire. We cannot attribute either to policy, or fear, this ſtrong emotion, becauſe we know that the ſenate was at this time abſolutely at the diſpoſal of Tiberius, and the lives of the ſons of Germanicus depended upon his pleaſure.

The deſire to excel, according to "Smith's "Theory of Moral Sentiments," is to be reſolved principally into our love of the ſympathy of our fellow-creatures. We wiſh for their ſympathy, either in our ſucceſs, or in the pleaſure we feel in ſuperiority. The deſire for this refined modification of ſympathy may be the motive of good and great actions, but it cannot

* See Smith.

be truſted as a moral principle. Nero's love of ſympathy made him anxious to be applauded on the ſtage as a fiddler and a buffoon. Tiberius baniſhed one of his philoſophic courtiers, and perſecuted him till the unfortunate man laid violent hands upon himſelf, merely becauſe he had diſcovered that the emperor read books in the morning to prepare himſelf with queſtions for his literary ſociety at night. Dionyſius, the tyrant of Syracuſe, ſued in the moſt abject manner for an Olympic crown, and ſent a critic to the gallies for finding fault with his verſes. Had not theſe men a ſufficient degree of ſenſibility to praiſe, and more than a ſufficient deſire for the ſympathy of their fellow-creatures?

At the age when children begin to unfold their ideas, and to expreſs their thoughts in words, they are ſuch intereſting and entertaining companions, that they attract a large portion of our daily attention: we liſten eagerly to their ſimple obſervations: we enter into their young aſtoniſhment at every new object; we are delighted to watch all their emotions; we help them with words to expreſs their ideas; we

anxiouſly endeavour to underſtand their imperfect reaſonings, and are pleaſed to find, or put them in the right. This ſeaſon of univerſal ſmiles and courteſy is delightful to children whilſt it laſts, but it ſoon paſſes away; they ſoon ſpeak without exciting any aſtoniſhment, and inſtead of meeting with admiration for every attempt to expreſs an idea, they are repulſed for troubleſome volubility; even when they talk ſenſe, they are ſuffered to talk unheard, or elſe they are checked for unbecoming preſumption. Children feel this change in public opinion and manners moſt ſeverely; they are not ſenſible of any change in themſelves, except, perhaps, they are conſcious of having improved both in ſenſe and language. This unmerited loſs of their late gratuitous allowance of ſympathy uſually operates unfavourably upon the temper of the ſufferers; they become ſhy and ſilent, and reſerved, if not ſullen; they withdraw from our capricious ſociety, and they endeavour to conſole themſelves with other pleaſures. They feel diſcontented with their own little occupations and amuſements, for want of the ſpectators and

the audience which uſed to be at their command. Children of a timid temper, or of an indolent diſpoſition, are quite diſpirited and bereft of all energy in theſe circumſtances; others, with greater vivacity, and more voluntary exertion, endeavour to ſupply the loſs of univerſal ſympathy by the invention of independent occupations; but they feel anger and indignation, when they are not rewarded with any ſmiles or any praiſe for their "virtuous toil." They naturally ſeek for new companions, either amongſt children of their own age, or amongſt complaiſant ſervants. Immediately all the buſineſs of education is at a ſtand, for neither theſe ſervants, nor theſe playfellows, are capable of becoming their inſtructors; nor can tutors hope to ſucceed, who have transferred their power over the pleaſures, and conſequently over the affections, of their pupils. Sympathy now becomes the declared enemy of all the conſtituted authorities. What chance is there of obedience or of happineſs, under ſuch a government?

Would it not be more prudent to prevent, than to complain, of theſe evils? Sympathy is

our firſt, beſt friend, in education, and by judicious management might long continue our faithful ally.

Inſtead of laviſhing our ſmiles and our attention upon young children for a ſhort period juſt at that age when they are amuſing playthings, ſhould not we do more wiſely if we reſerved ſome portion of our kindneſs a few years longer? By a proper *economy* our ſympathy may laſt for many years, and may continually contribute to the moſt uſeful purpoſes. Inſtead of accuſtoming our pupils early to ſuch a degree of our attention as cannot be ſupported long on our parts, we ſhould rather ſuffer them to feel a little ennui at that age, when they can have but few independent or uſeful occupations. We ſhould employ ourſelves in our uſual manner, and converſe, without allowing children to interrupt us with frivolous prattle; but whenever they aſk ſenſible queſtions, make juſt obſervations, or ſhew a diſpoſition to acquire knowledge, we ſhould aſſiſt and encourage them with praiſe and affection; gradually as they become capable of taking any part in converſation, they

ſhould be admitted into ſociety, and they will learn of themſelves, or we may teach them, that uſeful and agreeable qualities are thoſe by which they muſt ſecure the pleaſures of ſympathy. Eſteem, being aſſociated with ſympathy, will increaſe its value, and this connexion ſhould be made as ſoon, and kept as ſacred, in the mind as poſſible.

With reſpect to the ſympathy which children feel for each other, it muſt be carefully managed, or it will counteract, inſtead of aſſiſting us, in education. It is natural that thoſe who are placed nearly in the ſame circumſtances ſhould feel alike, and ſympathiſe with one another; but children feel only for the preſent, they have few ideas of the future, and conſequently all that they can deſire, either for themſelves, or for their companions, is what will *immediately* pleaſe. Education looks to the future, and frequently we muſt enſure future advantage, even at the expence of preſent pain or reſtraint. The companion and the tutor then, ſuppoſing each to be equally good and equally kind, muſt command in a very different

degree the ſympathy of the child. It may, notwithſtanding, be queſtioned whether thoſe who are conſtant companions in their idle hours, when they are *very* young, are likely to be either as fond of one another when they grow up, or even as happy whilſt they are children, as thoſe who ſpend leſs time together. Whenever the humours, intereſts, and paſſions, of others croſs our own, there is an end of ſympathy, and this happens almoſt every hour in the day with children; it is generally ſuppoſed that they learn to live in friendſhip with each other, and to bear with one another's little faults habitually; that they even reciprocally cure theſe faults, and learn, by early experience, thoſe principles of honour and juſtice on which ſociety depends. We may be deceived in this reaſoning by a falſe analogy.

We call the ſociety of children *ſociety in miniature;* the proportions of the miniature are ſo much altered, that it is by no means an accurate reſemblance of that which exiſts in the *civilized* world. Amongſt children of different ages, ſtrength, and talents, there muſt always

be tyranny, injuſtice, and that worſt ſpecies of inequality, which ariſes from ſuperior force on the one ſide, and abject timidity on the other. Of this the ſpectators of juvenile diſputes and quarrels are ſometimes ſenſible, and they haſtily interfere and endeavour to part the combatants, by pronouncing certain moral ſentences, ſuch as, "Good boys never quarrel; brothers muſt "love and help one another." But theſe ſentences ſeldom operate as a charm upon the angry paſſions; the parties concerned hearing it aſſerted that they muſt love one another, at the very inſtant when they happen to feel that they cannot, are ſtill farther exaſperated, and they ſtand at bay, ſullen in hatred, or approach hypocritical in reconciliation. It is more eaſy to prevent occaſions of diſpute, than to remedy the bad conſequences which petty altercations produce. Young children ſhould be kept aſunder at all times, and in all ſituations, in which it is neceſſary, or probable, that their appetites and paſſions ſhould be in direct competition. Two hungry children, with their eager eyes fixed upon one and the ſame baſon of bread and

milk, do not ſympathiſe with each other, though they have the ſame ſenſations; each perceives, that if the other eats the bread and milk, he cannot eat it. Hunger is more powerful than ſympathy; but ſatisfy the hunger of one of the parties, and immediately he will begin to feel for his companion, and will wiſh that *his* hunger ſhould alſo be ſatisfied. Even Mr. Barnet, the epicure, who is ſo well deſcribed in Moore's excellent novel *, *after* he has crammed himſelf to the throat, aſks his wife to "try to eat "a bit." Intelligent preceptors will apply the inſtance of the baſon of bread and milk in a variety of apparently diſſimilar circumſtances.

We may obſerve, that the more quickly children reaſon, the ſooner they diſcover how far their intereſts are anyways incompatible with the intereſts of their companions. The more readily a boy calculates, the ſooner he would perceive, that if he were to ſhare his baſon of bread and milk equally with a dozen of his companions, his own portion muſt be ſmall. The accuracy of his mental diviſion would prevent him from

* Edward.

offering to part with that ſhare which, perhaps, a more ignorant accountant would be ready to ſurrender at once, without being on that account more generous. Children, who are accurate obſervers of the countenance, and who have a ſuperior degree of penetration, diſcover very early the ſymptoms of diſpleaſure, or of affection, in their friends; they alſo perceive quickly the dangers of rivalſhip from their companions. If experience convinces them, that they muſt loſe in proportion as their companions gain, either in fame, or in favour, they will neceſſarily diſlike them as rivals; their hatred will be as vehement, as their love of praiſe and affection is ardent. Thus children, who have the moſt lively ſympathy, are, unleſs they be judiciouſly educated, the moſt in danger of feeling early the malevolent paſſions of jealouſy and envy. It is inhuman, and in every point of view unjuſtifiable in us, to excite theſe painful feelings in children, as we too often do, by the careleſs or partial diſtribution of affection and applauſe. Exact juſtice will beſt prevent jealouſy; each individual ſubmits to juſtice, be-

cauſe each, in turn, feels the benefit of its protection. Some preceptors, with benevolent intentions, labour to preſerve a perfect equality amongſt their pupils, and from the fear of exciting envy in thoſe who are inferior, avoid uttering any encomiums upon ſuperior talents and merit. This management ſeldom ſucceeds; the truth cannot be concealed; thoſe who feel their own ſuperiority make painful reflections upon the injuſtice done to them by the policy of their tutors; thoſe who are ſenſible of their own inferiority are not comforted, by the courteſy and humiliating forbearance with which they are treated. It is therefore beſt to ſpeak the plain truth; to give to all their due ſhare of affection and applauſe: at the ſame time we ſhould avoid blaming one child at the moment when we praiſe another; we ſhould never put our pupils in contraſt with one another, nor yet ſhould we deceive them as to their reſpective excellencies and defects. Our compariſon ſhould rather be made between what the pupil *has been*, and what he *is*, than between what

he *is*, and what any body elſe *is not**. By this ſtyle of praiſe we may induce children to become emulous of their former ſelves, inſtead of being envious of their competitors. Without deceit or affectation, we may alſo take care to aſſociate general pleaſure in a family with particular commendations; thus if one boy is remarkable for prudence, and another for generoſity, we ſhould not praiſe the generoſity of the one at the expence of the prudence of the other, but we ſhould give to each virtue its juſt meaſure of applauſe. If one girl ſings, and another draws, remarkably well, we may ſhow that we are pleaſed with both agreeable accompliſhments, without bringing them into compariſon. Nor is it neceſſary that we ſhould be in a deſperate hurry to balance the ſeparate degrees of praiſe which we diſtribute exactly at the ſame moment, becauſe if children are ſure that the reward of their induſtry and ingenuity is ſecured by our juſtice, they will truſt to us, though that reward may be for a few hours delayed. It is only where workmen have no

* V. Rouſſeau and Williams.

confidence in the integrity or punctuality of their maſters, that they are impatient of any accidental delay in the payment of their wages.

With the precautions which have been mentioned we may hope to ſee children grow up in friendſhip together. The whole ſum of their pleaſure is much increaſed by mutual ſympathy. This happy moral truth, upon which ſo many of our virtues depend, ſhould be impreſſed upon the mind; it ſhould be clearly demonſtrated to the reaſon; it ſhould not be repeated as an a priori, ſentimental aſſertion.

Thoſe who have obſerved the ſudden, violent, and ſurpriſing effects of emulation in public ſchools, will regret the want of this *power* in the intellectual education of their pupils at home. Even the acquiſition of talents and knowledge ought, however, to be but a ſecondary conſideration, ſubordinate to the general happineſs of our pupils. If we *could* have ſuperior knowledge, upon condition that we ſhould have a malevolent diſpoſition, and an irritable temper, ſhould we, ſetting every other moral conſideration aſide, be willing to make the pur-

chaſe at ſuch a price? Let any perſon, deſirous to ſee a ſtriking picture of the effects of ſcholaſtic competition upon the moral character, look at the life of that wonder of his age the celebrated Abeillard. As the taſte and manners of the preſent times are ſo different from thoſe of the age in which he lived, we ſee, without any ſpecies of deception, the real value of the learning in which he excelled, and we can judge both of his acquirements, and of his character, without prejudice. We ſee him goaded on by rivalſhip, and literary ambition, to aſtoniſhing exertions at one time, at another torpid in monkiſh indolence; at one time we ſee him intoxicated with adulation, at another liſtleſs, deſponding, abject, incapable of maintaining his own ſelf-approbation without the ſuffrages of thoſe whom he deſpiſed. If his biographer * does him juſtice, a more ſelfiſh, irritable, contemptible, miſerable being, than the learned Abeillard could ſcarcely exiſt.

A philoſopher †, who, if we might judge of him

* Berington's Life of Abeillard.

† Dr. John Gregory. Comparative View of the State

by the benignity of his writings, was ſurely of a moſt amiable and happy temper, has yet left us a melancholy and diſcouraging hiſtory of the unſociable condition of men of ſuperior knowledge and abilities. He ſuppoſes that thoſe who have devoted much time to the cultivation of their underſtandings, have habitually leſs ſympathy, or leſs exerciſe for their ſympathy, than thoſe who live leſs abſtracted from the world; that conſequently "all their ſocial, and all their "public affections, loſe their natural warmth "and vigour," whilſt their ſelfiſh paſſions are cheriſhed and ſtrengthened, being kept in conſtant play by literary rivalſhip. It is to be hoped that there are men of the moſt extenſive learning and genius, now living, who could, from their own experience, aſſure us that thoſe are obſolete obſervations, no longer applicable to modern human nature. At all events we, who refer ſo much to education, are hopefully of opinion, that education can prevent theſe evils, in common with *almoſt* all the other evils of

and Faculties of Man, with thoſe of the Animal World. See vol. ii. of his Works, from page 100 to 114.

life. It would be an error, fatal to all improvement, to believe that the cultivation of the underſtanding impedes the exerciſe of the ſocial affections. Obviouſly a man, who ſecludes himſelf from the world, and whoſe whole life is occupied with abſtract ſtudies, cannot enjoy any pleaſure from his ſocial affections; his admiration of the dead is ſo conſtant, that he has no time to feel any ſympathy with the living. An individual of this ruminating ſpecies is humorouſly delineated in Mrs. D'Arblay's Camilla. Men, who are compelled to unrelenting labour, whether by avarice, or by literary ambition, are equally to be pitied. They are not models for imitation: they ſacrifice their happineſs to ſome ſtrong paſſion or intereſt. Without this aſcetic abſtinence from the domeſtic and ſocial pleaſures of life, ſurely perſons may cultivate their underſtandings, and acquire, by mixing with their fellow-creatures, a variety of uſeful knowledge.

An ingenious theoriſt *, ſuppoſes, that the exerciſe of any of our faculties is always attend-

* Verniet's Théorie des Sentimens Agréables.

ed with pleaſure, as long as that exerciſe can be continued without fatigue. This pleaſure, ariſing from the due exerciſe of our mental powers, he maintains to be the foundation of our moſt agreeable ſentiments. If there be any truth in theſe ideas, of how many agreeable ſentiments muſt a man of ſenſe be capable! The pleaſures of ſociety muſt to him increaſe in an almoſt incalculable proportion, becauſe in converſation his faculties can never want ſubjects on which they may be amply exerciſed. The dearth of converſation, which every body may have felt in certain company, is always attended with mournful countenances, and every ſymptom of ennui. Indeed, without the pleaſures of converſation, ſociety is reduced to meetings of people, who aſſemble to eat and drink, to ſhew their fine clothes, to weary and hate one another. The ſympathy of bon vivants is, it muſt be acknowledged, very lively and ſincere towards each other; but this can laſt only during the feſtive hour, unleſs they revive, and prolong, by the powers of imagination, the memory of the feaſt. Some foreign

traveller* tells us that "every year at Naples "an officer of the police goes through the city, "attended by a trumpeter, who proclaims in all "the ſquares and croſs-ways how many thou- "ſand oxen, calves, lambs, hogs, &c. the "Neapolitans have had the honour of eating in "the courſe of the year." The people all liſten with the moſt ſympathetic attention to this proclamation, and are immoderately delighted at the huge amount.

A degree, and ſcarcely one degree, above the brute ſympathy of good eaters, is that gregarious propenſity which is ſometimes honoured with the name of ſociability. The current ſympathy, or appearance of ſympathy, which is to be found amongſt the idle and frivolous in faſhionable life, is wholly unconnected with even the idea of eſteem. It is therefore pernicious to all who partake of it; it excites to no great exertions, it rewards neither uſeful nor amiable qualities: on the contrary, it is to be obtained by vice, rather than by virtue; by folly much more readily than by wiſdom. It is the mere follower of faſhion,

* V. Varieties of Literature, vol. i.

and of diſſipation, and it keeps thoſe in humour, and countenance, who ought to hear the voice of public reproach, and who might be rouſed by the fear of diſgrace, or the feelings of ſhame, to exertions which ſhould juſtly entitle them to the approbation and affection of honourable friends.

Young people, who are early in life content with this *convivial* ſympathy, may, in the common phraſe, become *very good, pleaſant companions*; but there is little chance that they ſhould ever become any thing more, and there is great danger that they may be led into any degree of folly, extravagance, or vice, to which faſhion and the voice of numbers invite. It ſometimes happens, that men of ſuperior abilities have ſuch an indiſcriminate love of applauſe and ſympathy, that they reduce themſelves to the ſtandard of all their caſual companions, and vary their objects of ambition with the opinion of the ſilly people with whom they chance to aſſociate. In public life party ſpirit becomes the ruling principle of men of this character; in private life they are addicted to clubs, and aſ-

ſociations of all ſorts, in which the contagion of ſympathy has a power which the ſober influence of reaſon ſeldom ventures to correct. The waſte of talents, and the total loſs of principle to which this indiſcriminate love of ſympathy leads, ſhould warn us to guard againſt its influence by early education. The gregarious propenſity in childhood ſhould not be indulged without great precautions: unleſs their companions are well educated, we can never be reaſonably ſecure of the conduct or happineſs of our pupils: from ſympathy they catch all the wiſhes, taſtes, and ideas of thoſe with whom they aſſociate; and what is ſtill worſe, they acquire the dangerous habits of reſting upon the ſupport, and of wanting the ſtimulus of numbers. It is, ſurely, far more prudent to let children feel a little ennui from the want of occupation and of company, than to purchaſe for them the juvenile pleaſures of ſociety at the expence of their future happineſs.

As young people gradually acquire knowledge, they will learn to *converſe*, and when they have the habits of converſing rationally,

they will not desire companions who can only chatter. They will prefer the company of friends, who can sympathise in their occupations, to the presence of ignorant idlers, who can fill up the void of ideas with nonsense and noise. Some people have a notion that the understanding and the *heart* are not to be educated at the same time: but the very reverse of this is perhaps true; neither can be brought to any perfection, unless both are cultivated together.

We should not expect premature virtues. During childhood there occur but few opportunities of exerting the virtues which are recommended in books, such as humanity, and generosity.

The *humanity* of children cannot properly be said to be exercised upon animals; they are frequently extremely fond of animals, but they are not always equable in their fondness; they sometimes treat their favourites with that caprice which favourites are doomed to experience; this caprice degenerates into cruelty, if it is resented by the sufferer. We must not depend merely upon the natural sensations of compassion, as preservatives

againſt cruelty; theſe *inſtinctive* feelings are ſtrong amongſt uneducated people, yet theſe do not reſtrain them from acts of cruelty. They take delight, it has been often obſerved, in all tragical ſanguinary ſpectacles, becauſe theſe excite emotion, and relieve them from the liſtleſs ſtate in which their days uſually paſs. It is the ſame with all perſons, in all ranks of life, whoſe minds are uncultivated*. Until young people have fixed *habits* of benevolence, and a taſte for occupation, perhaps it is not prudent to truſt them with the care or protection of animals. Even when they are enthuſiaſtically fond of them, they cannot by their utmoſt ingenuity make the animals ſo happy in a ſtate of captivity, as they would be in a ſtate of liberty. They are apt to inſiſt upon doing animals good againſt their will, and they are often unjuſt in the defence of their favourites. A boy of ſeven years old once knocked down his ſiſter to prevent her from ſqueezing his caterpillar †,

* Can it be true that an Engliſh nobleman, in the 18th century, won a bet by procuring a man to eat a cat alive?

† See Moore's Edward for the boy and larks, an excellent ſtory for children.

Children ſhould not be taught to confine their benevolence to thoſe animals which are thought beautiful; the fear and diſguſt which we expreſs at the ſight of certain unfortunate animals, whom we are pleaſed to call ugly and ſhocking, are obſerved by children, and theſe aſſociations lead to cruelty. If we do not prejudice our pupils by fooliſh exclamations, if they do not from ſympathy catch our abſurd antipathies, their benevolence towards the animal world will not be illiberally confined to favourite lap-dogs, and ſinging birds. From aſſociation moſt people think that frogs are ugly animals. Lewis, a boy between five and ſix years old, once begged his mother to come out to look at a *beautiful* animal which he had juſt found; ſhe was rather ſurpriſed to find that this beautiful creature was a frog.

If children never ſee others torment animals, they will not think that cruelty can be an amuſement; but they may be provoked to revenge the pain which is inflicted upon them; and therefore we ſhould take care not to put children in ſituations where they are liable to be

hurt or terrified by animals. Could we poſſibly expect, that Gulliver ſhould love the Brobdignagian waſp that buzzed round his cake, and prevented him from eating his breakfaſt? Could we expect that Gulliver ſhould be ever reconciled to the rat againſt whom he was obliged to draw his ſword? Many animals are to children what the waſp and rat were to Gulliver. Put bodily fear out of the caſe, it required all uncle Toby's benevolence to bear the buzzing of a gnat while he was eating his dinner. Children, even when they have no cauſe to be afraid of animals, are ſometimes in ſituations to be provoked by them; and the nice caſuiſt will find it difficult to do ſtrict juſtice upon the offended and the offenders.

October 2, 1796. S——, nine years old, took care of his brother H——'s hot-bed for ſome time, when H——— was abſent from home. He was extremely anxious about his charge; he took one of his ſiſters to look at the hot-bed, ſhewed her a hole where the mice came in, and expreſſed great hatred againſt the whole race. He the ſame day aſked his mother

for a bait for the mouſe-trap. His mother refuſed to give him one, telling him that ſhe did not wiſh he ſhould learn to kill animals. How good nature ſometimes leads to the oppoſite feeling! S——'s love for his brother's cucumbers made him *imagine*, and compaſs the death of the mice. Children ſhould be protected againſt animals, which we do not wiſh that they ſhould hate; if cats ſcratch them, and dogs bite them, and mice devour the fruits of their induſtry, children muſt conſider theſe animals as enemies; they cannot love them, and they may learn the habit of revenge from being expoſed to their inſults and depredations. Pythagoras himſelf would have inſiſted upon his excluſive right to the vegetables on which he was to ſubſiſt, eſpecially if he had raiſed them by his own care and induſtry. Buffon*, notwithſtanding all his benevolent philoſophy, can ſcarcely ſpeak with patience of his enemies the field mice; who, when he was trying experiments upon the culture of foreſt trees, tormented him perpetually by their inſatiable love of acorns. "*I was terrified*," ſays

* Mem. de l'Acad. R. for the year 1742, p. 332.

he "at the diſcovery of half a buſhel, and often "a whole buſhel, of acorns in each of the holes "inhabited by theſe little animals; they had "collected theſe acorns for their winter pro-"viſion." The philoſopher gave orders immediately for the erection of a great number of traps, and ſnares baited with broiled nuts; in leſs than three weeks nearly three hundred field mice were killed *or taken priſoners*. Mankind are obliged to carry on a defenſive war againſt the animal world. It is fortunate for us that there are butchers by profeſſion in the world, and rat-catchers, and cats, otherwiſe our habits of benevolence and ſympathy would be put to ſevere trials. Children, though they muſt perceive the neceſſity for deſtroying certain animals, need not be themſelves executioners; they ſhould not conquer the natural repugnance to the ſight of the ſtruggles of pain, and the convulſions of death; their averſion to being the cauſe of pain ſhould be preſerved both by principle and habit. Thoſe who have not been habituated to the bloody form of cruelty, can never fix their eye upon her without ſhudder-

ing; even thoſe to whom ſhe may have in ſome inſtances been early familiariſed, recoil from her appearance in any ſhape to which they have not been accuſtomed. At one of the magnificent ſhews, with which Pompey entertained the Roman people for five days ſucceſſively, the populace enjoyed in profuſion the death of wild beaſts; no leſs than five hundred lions were killed; but, on the laſt day, when twenty elephants were put to death, the people, unuſed to the ſight, and to the lamentable howlings of theſe animals, were ſeized with ſudden compaſſion; and execrated Pompey himſelf for being the author of ſo much cruelty.

Charity to the poor is often inculcated in books for children; but how is this virtue to be actually brought into practice in childhood? Without proper objects of charity are ſelected by the parents, children have no opportunities of diſcovering them; they have not ſufficient knowledge of the world to diſtinguiſh truth from falſehood in the complaints of the diſtreſſed; nor have they ſufficiently enlarged views to diſcern the beſt means of doing good to their

fellow creatures. They may give away money to the poor, but they do not always feel the value of what they give: they give counters; ſupplied with all the neceſſaries and luxuries of life, they have no uſe for money, they feel no privation, they make no ſacrifice in giving money away, or at leaſt none worthy to be extolled as heroic. When children grow up, they learn the value of money, their generoſity will then coſt them rather more effort, and yet can be rewarded only with the ſame expreſſions of gratitude, with the ſame bleſſings from the beggar, or the ſame applauſe from the ſpectator.

Let us put charity out of the queſtion, and ſuppoſe that the generoſity of children is diſplayed in making preſents to their companions, ſtill there are difficulties. Theſe preſents are uſually baubles, which at the beſt can encourage only a frivolous taſte. But we muſt further conſider, that even generous children are apt to expect generoſity equal to their own from their companions; then come tacit or explicit compariſons of the value or elegance of their reſpective gifts; the difficult rules of ex-

change and barter are to be learned; and nice calculations of *Tare and Tret* are entered into by the repentant borrowers and lenders. A ſentimental, too often ends in a commercial intercourſe; and thoſe who begin with the moſt munificent diſpoſitions, ſometimes end with ſelfiſh diſcontent, low cunning, or diſguſting oſtentation. Whoever has carefully attended to young makers of preſents, and makers of bargains, will not think this account of them much exaggerated.

"Then what is to be done? How are the "ſocial affections to be developed? How is "the ſenſibility of children to be tried? How "is the young heart to diſplay its moſt amiable "feelings?" a ſentimental preceptreſs will impatiently inquire.

The amiable feelings of the heart need not be diſplayed; they may be ſufficiently exerciſed without the ſtimulus either of our eloquence or our applauſe. In Madame de Silleri's account of the education of the children of the duke of Orleans there appears rather too much ſentimental artifice and management.

When the ducheſs of Orleans was ill, the children were inſtructed to write "charming notes" from day to day, from hour to hour, to inquire how ſhe did. Once, when a ſervant was going from Saint Leu to Paris, madame de Silleri aſked her pupils if they had any commiſſions; the little duke de Chartres ſaid Yes, and he gave a meſſage about a bird-cage, but he did not recollect to write to his mother, till ſomebody whiſpered to him that he had forgotten it. Madame de Silleri calls this childiſh forgetfulneſs a "heinous offence;" but was not it very natural that the boy ſhould think of his bird-cage? and what mother would wiſh that her children ſhould have it put into their head, to inquire after her health in the complimentary ſtyle? Another time madame de Silleri is diſpleaſed with her pupils, becauſe they did not ſhew ſufficient ſympathy and concern for her when ſhe had a head-ache or ſore throat. The exact number of meſſages which, conſiſtently with the ſtrict duties of friendſhip, they ought to have ſent, are upon another occaſion preſcribed.

"I had yeſterday afternoon a violent attack of

" the colic, and you diſcovered the greateſt ſen-
" ſibility. By the journal of M. le Brun, I find
" it was the duke de Montpenſier who thought
" this morning of writing to inquire how I did.
" You left me yeſterday in a very calm ſtate,
" and there was no reaſon for anxiety; but,
" conſiſtently with the ſtrict duties of friendſhip,
" you ought to have given orders before you
" went to bed, for inquiries to be made at eight
" o'clock in the morning to know whether I
" had had any return of my complaint during
" the night; and you ſhould again have ſent
" at ten to learn from myſelf the inſtant I awoke
" the exact ſtate of my health. Such are the
" benevolent and tender cares which a lively
" and ſincere friendſhip dictates. You muſt
" accuſtom yourſelves to the obſervance of them
" if you wiſh to be loved."

Another day madame de Sillery told the duke de Chartres, that he had a very idiotic appearance, becauſe, when he went to ſee his mother, his attention was taken up by two parroquets which happened to be in the room. All theſe reproaches and documents could not,

we ſhould apprehend, tend to increaſe the real ſenſibility and affection of children. Gratitude is one of the moſt certain, but one of the lateſt, rewards, which preceptors and parents ſhould expect from their pupils. Thoſe who are too impatient to wait for the gradual developement of the affections, will obtain from their children, inſtead of warm, genuine, enlightened gratitude, nothing but the expreſſion of cold, conſtrained, ſtupid hypocriſy. During the proceſs of education a child cannot perceive its ultimate end; how can he judge whether the means employed by his parents are well adapted to effect their purpoſes? Moments of reſtraint and of privation, or, perhaps, of poſitive pain, muſt be endured by children under the mildeſt ſyſtem of education: they muſt, therefore, perceive, that their parents are the immediate cauſe of ſome evils to them; the remote good is beyond their view. And can we expect from an infant the ſyſtematic reſignation of an optimiſt? Belief upon truſt is very different from that which ariſes from experience; and no one, who underſtands the human heart, will expect incom-

patible feelings; in the mind of a child the feeling of preſent pain is incompatible with gratitude. Mrs. Macaulay mentions a ſtriking inſtance of extorted gratitude. A poor child, who had been taught to return thanks for every thing, had a bitter medicine given to her; when ſhe had drunk it ſhe curtſied, and ſaid, "Thank "you for my good ſtuff." There was a miſtake in the medicine, and the child died the next morning.

Children who are not ſentimentally educated often offend by their ſimplicity, and frequently diſguſt people of impatient feelings, by their apparent indifference to things which are expected to touch their ſenſibility. Let us be content with nature, or rather let us never exchange ſimplicity for affectation. Nothing hurts young people more than to be watched continually about their feelings, to have their countenances ſcrutinized, and the degrees of their ſenſibility meaſured by the ſurveying eye of the unmerciful ſpectator. Under the conſtraint of ſuch examinations they can think of nothing, but that they are looked at, and feel nothing but ſhame

or apprehenſion: they are afraid to lay their minds open, leſt they ſhould be convicted of ſome deficiency of feeling. On the contrary, children who are not in dread of this ſentimental inquiſition ſpeak their minds, the truth, and the whole truth, without effort or diſguiſe: they lay open their hearts, and tell their thoughts as they ariſe, with ſimplicity that would not fear to enter even "The palace of Truth*."

A little girl, Ho——, who was not quite four years old, aſked her mother to give her a plaything: one of her ſiſters had juſt before aſked for the ſame thing. "I cannot give it to you both," ſaid the mother.

Ho——. No, but I wiſh you to give it to me, and not to E——.

Mother. Don't you wiſh your ſiſter to have what ſhe wants?

Ho——. Mother, if I ſay that I *don't* wiſh ſo, will you give it to me?

Perhaps this *naïveté* might have diſpleaſed ſome ſcrupulous admirers of politeneſs, who

* V. Le Palais de la Vérité.—Madame de Genlis Veillées du Château.

could not diſcover in it ſymptoms of that independent ſimplicity of character, for which the child who made this ſpeech was diſtinguiſhed.

" Do you *always* love me?"—ſaid a mother to her ſon, who was about four years old.

" Always," ſaid the child, " except when I " am aſleep?"

Mother " And why do not you love me when " you are aſleep?"

Son. " Becauſe I do not think of you then."

This ſenſible anſwer ſhewed, that the boy reflected accurately upon his own feelings, and a judicious parent muſt conſequently have a ſober certainty of his affection. The thoughtleſs careſſes of children, who are never accuſtomed to reaſon, are laviſhed alike upon ſtrangers and friends, and their fondneſs of to-day may without any reaſonable cauſe become averſion by to-morrow.

Children are often aſked to tell which of their friends they love the beſt, but they are ſeldom required to aſſign any reaſon for their choice. It is not prudent to queſtion them frequently about their own feelings; but whenever they

expreſs any decided preference we ſhould endeavour to *lead*, not to *drive* them to reflect upon the reaſons for their affection. They will probably at firſt mention ſome particular inſtance of kindneſs, which they have lately received from the perſon whom they prefer. "I "like ſuch a perſon becauſe he mended my "top."—"I like ſuch another becauſe he took "me out to walk with him and let me gather "flowers." By degrees we may teach children to generalize their ideas, and to perceive that they like people for being either uſeful or agreeable.

The deſire to return kindneſs by kindneſs ariſes very early in the mind, and the hope of conciliating the good will of the powerful beings by whom they are ſurrounded, is one of the firſt wiſhes that appears in the minds of intelligent and affectionate children. From this ſenſe of mutual dependence the firſt principles of ſocial intercourſe are deduced, and we may render our pupils either mean ſycophants or uſeful and honourable members of ſociety, by the methods which we uſe to direct their firſt

efforts to pleaſe. It ſhould be our object to convince them, that the exchange of mutual good offices contributes to happineſs, and whilſt we connect the deſire to aſſiſt others with the perception of the beneficial conſequences that eventually ariſe to themſelves, we may be certain that children will never become blindly ſelfiſh, or idly ſentimental. We cannot help admiring the ſimplicity, ſtrength of mind, and good ſenſe, of a little girl of four years old, who, when ſhe was put into a ſtage coach with a number of ſtrangers, looked round upon them all, and after a few minutes ſilence addreſſed them with the imperfect articulation of infancy in the following words:

"If you'll be good to me, I'll be good to "you!"

Whilſt we were writing upon ſympathy and ſenſibility we met with the following appoſite paſſage.

"In 1765, I was," ſays M. de St. Pierre, "at "Dreſden, at a play acted at court; it was the "Pere de Famille. The electoreſs came in "with one of her daughters, who might be

" about five or ſix years old. An officer of the " Saxon guards, who came with me to the play, " whiſpered, ' That child will intereſt you as " much as the play.' As ſoon as ſhe was ſeated, " ſhe placed both her hands on the front of the " box, fixed her eyes upon the ſtage, and con- " tinued with her mouth open, all attention to " the motions of the actors. It was truly touch- " ing to ſee their different paſſions painted on " her face as in a glaſs. There appeared in her " countenance ſucceſſively, anxiety, ſurpriſe, " melancholy, and grief; at length the intereſt " increaſing in every ſcene tears began to flow, " which ſoon ran in abundance down her little " cheeks; then came agitation, ſighs, and loud " ſobs; at laſt they were obliged to carry her " out of the box leſt ſhe ſhould choak herſelf " with crying. My next neighbour told me, " that every time that this young princeſs came " to a pathetic play, ſhe was obliged to leave " the houſe before the cataſtrophe."

" I have ſeen," continues M. de St. Pierre, " inſtances of ſenſibility ſtill more touching " amongſt the children of the common people,

" becauſe the emotion was not here produced
" by any theatrical effect. As I was walking
" ſome years ago in the Pré St. Gervais, at the
" beginning of winter, I ſaw a poor woman
" lying on the ground buſied in weeding a bed
" of ſorrel; near her was a little girl of ſix years
" old at the utmoſt, ſtanding motionleſs, and
" all purple with cold. I addreſſed myſelf to
" this woman, who appeared to be ill, and I
" aſked her what was the matter with her.
" Sir,' ſaid ſhe, ' for theſe three months I have
" ſuffered terribly from the rheumatiſm, but
" my illneſs troubles me leſs than this child, ſhe
" never will leave me; if I ſay to her, ' Thou
" art quite frozen, go and warm thyſelf in the
" houſe,' ſhe anſwers me, ' Alas! mamma, if
" I leave you, you'll certainly fall ill again!"

" Another time, being at Marly, I went to
" ſee in the groves of that magnificent park,
" that charming group of children who are feed-
" ing with vine leaves and grapes a goat who
" ſeems to be playing with them. Near this
" ſpot is an open ſummer-houſe, where Louis
" XV. on fine days, uſed ſometimes to take re-

"freſhment. As it was ſhowery weather, I "went to take ſhelter for a few minutes. I "found there three children, who were much "more intereſting than children of marble. "They were two little girls, very pretty, and "very buſily employed in picking up all round "the ſummer-houſe dry ſticks, which they put "into a ſort of wallet which was lying upon the "king's table, whilſt a little ill clothed thin "boy was devouring a bit of bread in one cor-"ner of the room. I aſked the talleſt of the "children, who appeared to be between eight "and nine years old, what ſhe meant to do with "the wood which ſhe was gathering together "with ſo much eagerneſs. She anſwered, 'Sir, "you ſee that little boy, he is very unhappy. "He has a mother-in-law who ſends him all "day long to look for wood, when he does not "bring any home he is beaten; when he has "got any, the Swiſs who ſtands at the entrance "of the park takes it all away from him, and "keeps it for himſelf. The boy is almoſt ſtarved "with hunger, and we have given him our "breakfaſt.' After having ſaid theſe words,

" ſhe and her companion finiſhed filling the little " wallet, they packed it upon the boy's ſhoul- " ders, and they ran before their unfortunate " friend to ſee that he might paſs in ſafety."

We have read theſe three anecdotes to ſeveral children, and have found that the *active* friends of the little gatherer of ſticks were the moſt admired. It is probable, that amongſt children who have been much praiſed for expreſſions of ſenſibility, the young lady who wept ſo bitterly at the play-houſe would be preferred; affectionate children will like the little girl who ſtood purple with cold beſide her ſick mother; but if they have been well educated, they will probably expreſs ſome ſurpriſe at her motionleſs attitude; they will aſk why ſhe did not try to help her mother to weed the bed of ſorrel.

It requires much ſkill and delicacy in our conduct towards children, to preſerve a proper medium between the indulging and the repreſſing their ſenſibility. We are cruel towards them when we ſuſpect their genuine expreſſions of affection; nothing hurts the temper of a ge-

nerous child more than this ſpecies of injuſtice. Receive his expreſſions of kindneſs and gratitude with cold reſerve, or a look that implies a doubt of his truth, and you give him ſo much pain, that you not only repreſs, but deſtroy his affectionate feelings. On the contrary, if you appear touched and delighted by his careſſes, from the hope of pleaſing he will be naturally inclined to repeat ſuch demonſtrations of ſenſibility: this repetition ſhould be gently diſcouraged, leſt it ſhould lead to affectation. At the ſame time, though we take this precaution, we ſhould conſider, that children are not early ſenſible, that affectation is either ridiculous or diſguſting; they are not conſcious of doing any thing wrong by repeating what they have once perceived to be agreeable in their own, or in the manners of others. They frequently imitate, without any idea that imitation is diſpleaſing; as Locke obſerves, they only miſtake the means of pleaſing; we ſhould rectify this miſtake without treating it as a crime.

A little girl of five years old ſtood beſide her mother, obſerving the diſtribution of a diſh of

ſtrawberries, the firſt ſtrawberries of the year; and ſeeing a number of people buſily helping, and being helped to cream and ſugar, ſaid in a low voice, not meant to attract attention, "I "like to ſee people helping one another." Had the child, at this inſtant, been praiſed for this natural expreſſion of ſympathy, the pleaſure of praiſe would have been immediately ſubſtituted in her mind, inſtead of the feeling of benevolence, which was in itſelf ſufficiently agreeable; and, perhaps, from a deſire to pleaſe, ſhe would, upon the next favourable occaſion, have repeated the ſame ſentiment; this we ſhould immediately call affectation, but how could the child foreſee that the repetition of what we formerly liked would be offenſive? We ſhould not firſt extol ſympathy, and then diſdain affectation; our encomiums frequently produce the faults by which we are diſguſted. Senſibility and ſympathy, when they have proper objects, and full employment, do not look for applauſe; they are ſufficiently happy in their own enjoyments. Thoſe who have attempted to teach children muſt have obſerved, that ſympathy is

immediately connected with all the imitative arts; the nature of this connexion, more especially in poetry and painting, has been pointed out with ingenuity and eloquence by thoſe * whoſe excellence in theſe arts entitle their theories to our prudent attention. We ſhall not attempt to repeat, we refer to their obſervations. Sufficient occupation for ſympathy may be found by cultivating the talents of young people.

Without repeating here what has been ſaid in many other places, it may be neceſſary to remind all who are concerned in *female* education, that peculiar caution is neceſſary to manage female ſenſibility; to make, what is called the heart, a ſource of permanent pleaſure, we muſt cultivate the reaſoning powers at the ſame time that we repreſs the enthuſiaſm of *fine feeling*. Women, from their ſituation and duties in ſociety, are called upon rather for the daily exerciſe of quiet domeſtic virtues, than for thoſe ſplendid acts of generoſity, or thoſe exaggerated

* Sir Joſhua Reynolds's Diſcourſes. Dr. Darwin's Critical Interludes in the Botanic Garden, and his chapter on Sympathy and Imitation in Zoonomia.

expreſſions of tenderneſs, which are the characteriſtics of heroines in romance. Sentimental authors paint with enchanting colours all the graces and all the virtues in happy union. Afterwards, from the natural influence of aſſociation, we expect in real life to meet with virtue when we ſee grace, and we are diſappointed, almoſt diſguſted, when we find virtue unadorned. This falſe aſſociation has a double effect upon the conduct of women; it prepares them to be pleaſed, and it excites them to endeavour to pleaſe by adventitious charms, rather than by thoſe qualities which merit eſteem. Women, who have been much addicted to common novel-reading, are always acting in imitation of ſome Jemima, or Almeria, who never exiſted, and they perpetually miſtake plain William and Thomas for "*My Beverly!*" They have another peculiar misfortune; they require continual great emotions to keep them in tolerable humour with themſelves; they muſt have tears in their eyes, or they are apprehenſive that their hearts are growing hard. They have accuſtomed themſelves to ſuch violent ſtimulus,

that they cannot endure the languor to which they are ſubject in the intervals of delirium. Pink appears pale to the eye that is uſed to ſcarlet, and common food is inſipid to the taſte which has been vitiated by the high ſeaſonings of art.

A celebrated French actreſs, in the wane of her charms, and who, for that reaſon, began to feel weary of the world, exclaimed, whilſt ſhe was recounting what ſhe had ſuffered from a faithleſs lover, "Ah, c'étoit le bon temps, j'étois bien malheureuſe*!"

The happy age in which women can, with any grace or effect, be romantically wretched, is, even with the beautiful, but a ſhort ſeaſon of felicity. The ſentimental ſorrows of any female mourner, of more than thirty years ſtanding, command but little ſympathy, and leſs admiration; and what other conſolations are ſuited to ſentimental ſorrows?

Women, who cultivate their reaſoning powers, and who acquire taſtes for ſcience and literature, find ſufficient variety in life, and do not require

* D'Alembert.

the *ſtimulus* of diſſipation, or of romance. Their ſympathy and ſenſibility are engroſſed by proper objects, and connected with habits of uſeful exertion: they uſually feel the affection which others profeſs, and actually enjoy the happineſs which others deſcribe.

CHAPTER XI.

ON VANITY, PRIDE, AND AMBITION.

WE ſhall not weary the reader by any common place declamation upon theſe moral topics. No great ſubtlety of diſtinction is requiſite to mark the differences betwixt Vanity and Pride, ſince thoſe differences have been pointed out by every moraliſt, who has hoped to pleaſe mankind by an accurate delineation of the failings of human nature. Whatever diſtinctions exiſt, or may be ſuppoſed to exiſt, between the characters in which pride or vanity predominates, it will readily be allowed, that there is one thing in which they both agree, they both receive pleaſure from the approbation of others, and from their own. We are diſguſted with the vain man, when he intemperately indulges

in praiſe of himſelf, however juſtly he may be entitled to that praiſe, becauſe he offends againſt thoſe manners which we have been accuſtomed to think polite, and he claims from us a greater portion of ſympathy than we can afford to give him. We are not, however, pleaſed by the negligence with which the proud man treats us; we do not like to ſee that he can exiſt in independent happineſs, ſatisfied with a cool internal ſenſe of his own merits; he loſes our ſympathy, becauſe he does not appear to value it.

If we could give our pupils exactly the character we wiſh, what degrees of vanity and pride ſhould we deſire them to have, and how ſhould we regulate theſe paſſions? Should we not deſire, that their ambition to excel might be ſufficient to produce the greateſt poſſible exertions, directed to the beſt poſſible objects; that their opinion of themſelves ſhould be ſtrictly juſt, and ſhould never be expreſſed in ſuch a manner as to offend againſt propriety, nor ſo as to forfeit the ſympathy of mankind. As to the degree of pleaſure which they ſhould

feel from their ſecret reflexions upon their own meritorious conduct, we ſhould certainly deſire this to be as laſting, and as exquiſite, as poſſible. A conſiderable portion of the happineſs of life ariſes from the ſenſe of ſelf-approbation; we ſhould therefore ſecure this gratification in its utmoſt perfection. We muſt obſerve, that, however independent the proud man imagines himſelf to be of the opinions of all round him, he muſt form his judgment of his own merits from ſome ſtandard of compariſon, by ſome laws drawn from obſervation of what mankind in general, or thoſe whom he particularly eſteems, think wiſe or amiable. He muſt begin then in the ſame manner as the vain man, whom he deſpiſes, by collecting the ſuffrages of others; if he ſelects with perfect wiſdom the opinions which are moſt juſt, he forms his character upon excellent principles, and the more ſteadily he abides by his firſt views, the more he commands and obtains reſpect. But if unfortunately he makes a miſtake at firſt, his obſtinacy in error is not to be eaſily corrected, for he is not affected by the general voice of diſappro-

bation, nor by the partial loſs of the common pleaſures of ſympathy. The vain man, on the contrary, is in danger, let him form his firſt notions of right and wrong ever ſo juſtly, of changing them when he happens to be in ſociety with any perſons who do not agree with him in their moral opinions, or who refuſe him that applauſe which ſupports his own feeble ſelf-approbation. We muſt, in education, endeavour to guard againſt theſe oppoſite dangers; we muſt enlighten the underſtanding to give our pupils the power of forming their rules of conduct rightly, and we muſt give them ſufficient ſtrength of mind to abide by the principles which they have formed. When we firſt praiſe children, we muſt be careful to aſſociate pleaſure with thoſe things which are really deſerving of approbation. If we praiſe them for beauty, or for any happy expreſſions, which entertain us, but which entertain us merely as the ſprightly nonſenſe of childhood, we create vanity in the minds of our pupils; we give them falſe ideas of merit, and, if we excite them to exertions, they are not exertions di-

rected to any valuable objects. Praiſe is a ſtrong ſtimulus to induſtry, if it be properly managed; but if we give it in too large and laviſh quantities early in life, we ſhall ſoon find that it loſes its effect, and that the *patient* languiſhes for want of the excitation which cuſtom has rendered almoſt eſſential to his exiſtence. We ſay the *patient*, for this mental languor may be conſidered entirely as a diſeaſe. For its cure, ſee the ſecond volume of Zoonomia, under the article Vanity.

Children, who are habituated to the daily and hourly food of praiſe, continually require this ſuſtenance unleſs they are attended to; but we may gradually break bad habits. It is ſaid that ſome animals can ſupply themſelves at a ſingle draught with what will quench their thirſt for many days. The human animal may, perhaps, by education, be taught ſimilar foreſight and abſtinence in the management of his thirſt for flattery. Young people, who live with perſons that ſeldom beſtow praiſe, do not expect that ſtimulus, and they are content if they diſcover by certain ſigns either in the coun-

tenance, manner, or tone of voice, of thoſe whom they wiſh to pleaſe, that they are tolerably well ſatisfied. It is of little conſequence by what language approbation be conveyed, whether by words, or looks, or by that ſilence which ſpeaks with ſo much eloquence; but it is of great importance that our pupils ſhould ſet a high value upon the expreſſions of our approbation. They will value it in proportion to their eſteem and their affection for us; we include in the word eſteem a belief in our juſtice, and in our diſcernment. Expreſſions of affection, aſſociated with praiſe, not only increaſe the pleaſure, but they alter the nature of that pleaſure; and if they gratify vanity, they at the ſame time excite ſome of the beſt feelings of the heart. The ſelfiſhneſs of vanity is corrected by this aſſociation; and the two pleaſures of ſympathy and ſelf-complacency ſhould never, when we can avoid it, be ſeparated.

Children, who are well educated, and who have acquired an habitual deſire for the approbation of their friends, may continue abſolutely indifferent to the praiſe of ſtrangers, or

of *common* acquaintance; nor is it probable that this indifference ſhould ſuddenly be couquered, becauſe the greateſt part of the pleaſure of praiſe in their mind depends upon the eſteem and affection which they feel for the perſons by whom it is beſtowed. Inſtead of deſiring that our pupils ſhould entirely repreſs, in the company of their own family, the pleaſure which they feel from the praiſe that is given to them by their friends, we ſhould rather indulge them in this natural expanſion of mind; we ſhould rather permit their youthful vanity to diſplay itſelf openly to thoſe whom they muſt love and eſteem, than drive them, by unreaſonable ſeverity, and a cold refuſal of ſympathy, into the ſociety of leſs rigid obſervers. Thoſe who have an averſion to vanity will not eaſily bear with its intemperance of tongue; but they ſhould conſider, that much of what diſguſts them is owing to the ſimplicity of childhood, which muſt be allowed time to learn that reſpect for the feelings of others that teaches us to reſtrain our own; but we muſt not be in haſte to reſtrain, leſt we teach hypocriſy, inſtead of ſtrength of mind, or real

humility. If we expect that children ſhould excel, and ſhould not know that they excel, we expect impoſſibilities; we expect at the ſame time intelligence and ſtupidity. If we deſire that they ſhould be excited by praiſe, and that at the ſame time they ſhould feel no pleaſure in the applauſe which they have earned, we deſire things that are incompatible. If we encourage children to be frank and ſincere, and yet, at the ſame time, reprove them whenever they naturally expreſs their opinions of themſelves, or the pleaſurable feelings of ſelf-approbation, we ſhall counteract our own wiſhes. Inſtead of haſtily blaming children for the ſincere and ſimple expreſſion of their ſelf-complacency, or of their deſire for the approbation of others, we ſhould gradually point out to them that thoſe who refrain from that diſplay of their own perfections which we call vanity, in fact are well repaid for the conſtraint which they put upon themſelves by the ſuperior degree of reſpect and ſympathy which they obtain; that vain people effectually counteract their own wiſhes, and meet with contempt, inſtead of admira-

tion. By appealing conſtantly when we praiſe to the judgment of the pupils themſelves, we ſhall teach them the habit of rejudging flattery, and ſubſtitute, by inſenſible degrees, patient, ſteady confidence in themſelves, for the wavering, weak, impatience of vanity. In proportion as any one's confidence in himſelf increaſes, his anxiety for the applauſe of others diminiſhes: people are very ſeldom vain of any accompliſhments in which they obviouſly excel, but they frequently continue to be vain of thoſe which are doubtful. Where mankind have not confirmed their own judgment, they are reſtleſs, and continually aim either at convincing others, or themſelves, that they are in the right. Hogarth, who invented a new and original manner of ſatiriſing the follies of mankind, was not vain of this talent, but was extremely vain of his hiſtorical paintings, which, it is ſaid, were indifferent performances. Men of acknowledged literary talents are ſeldom fond of amateurs, but, if they are but half ſatisfied with their own ſuperiority, they collect the tribute of applauſe with avidity, and with-

out diſcrimination or delicacy. Voltaire has been reproached with treating ſtrangers rudely who went to Ferney to ſee and admire a philoſopher as a prodigy. Voltaire valued his time more than he did this vulgar admiration; his viſitors, whoſe underſtanding had not gone through exactly the ſame proceſs, who had not probably been ſatisfied with public applauſe, and who ſet, perhaps, a conſiderable value upon their own praiſe, could not comprehend this appearance of indifference to admiration in Voltaire, eſpecially when it was well known that he was not inſenſible of fame. He was at an advanced age exquiſitely anxious about the fate of one of his tragedies, and a public coronation at the theatre at Paris had power to inebriate him at eighty-four. Thoſe who have exhauſted the ſtimulus of wine, may yet be intoxicated by opium. The voice of numbers appears to be ſometimes neceſſary to give delight to thoſe who have been fatigued with the praiſe of individuals: but this taſte for *acclamation* is extremely dangerous. A multitude of good judges ſeldom meet together.

By a ſlight difference in their manner of reaſoning, two men of abilities who ſet out with the ſame deſire for fame, may acquire either pride, or vanity; the one may value the number, the other may appreciate the judgment of his admirers. There is ſomething not only more wiſe, but more elevated, in this latter ſpecies of ſelect triumph; the noiſe is not ſo great; the muſic is better. "If I liſtened to "the muſic of praiſe," ſays an hiſtorian, who obviouſly was not inſenſible to its charms, "I "was more ſeriouſly ſatisfied with the appro- "bation of my *judges*. The candour of Dr. "Robertſon embraced his diſciple. A letter "from Mr. Hume overpaid the labour of ten "years*." Surely no one can be diſpleaſed with this laſt generous expreſſion of enthuſiaſm; we are not ſo well ſatisfied with Buffon, when he oſtentatiouſly diſplays the epiſtles of a prince and an empreſs†.

* Gibbon. Memoirs of his Life and Writings, p. 148. Perhaps Gibbon had this excellent line of Mrs. Barbauld's in his memory,

"And pay a life of hardſhip with a line."

† See Peltier's State of Paris in the years 1795 and 1796.

Perhaps, by pointing out at proper opportunities the difference in our feelings with reſpect to vulgar and refined vanity, we might make a uſeful impreſſion upon thoſe, who have yet their habits to form. The converſion of vanity into pride is not ſo difficult a proceſs as thoſe, who have not analyſed both, might from the ſtriking difference of their appearance imagine. By the oppoſite tendencies of education, oppoſite characters from the ſame original diſpoſitions are produced. Cicero, had he been early taught to deſpiſe the applauſe of the multitude, would have turned away like the proud philoſopher, who aſked his friends what abſurdity he had uttered when he heard the populace loud in acclamations of his ſpeech; and the cynic, whoſe vanity was ſeen through the holes in his cloak, might perhaps, by a ſlight difference in his education, have been rendered ambitious of the Macedonian's purple.

In attempting to convert vanity into pride, we muſt begin by exerciſing the vain patient in forbearance of preſent pleaſure; it is not enough to convince his underſtanding, that the advantages

of proud humility are great; he may be perfectly ſenſible of this, and may yet have ſo little command over himſelf, that his loquacious vanity may get the better, from hour to hour, of his better judgment. Habits are not to be inſtantaneouſly conquered by reaſon; if we do not keep this fact in our remembrance, we ſhall be frequently diſappointed in education; and we ſhall, perhaps, end by thinking that reaſon can do nothing, if we begin by thinking that ſhe can do every thing. We muſt not expect, that a vain child ſhould ſuddenly break and forget all his paſt aſſociations; but we may, by a little early attention, prevent much of the trouble of curing the diſeaſe of vanity, or by ſkilful management, we may convert it into pride.

When children firſt begin to learn accompliſhments, or to apply themſelves to literature, thoſe who inſtruct are apt to encourage them with too large a portion of praiſe; *the ſmalleſt quantity of ſtimulus that can produce the exertion we deſire ſhould be uſed;* if we uſe more, we waſte our power, and injure our pupil. As ſoon as habit has made any exertion familiar,

and conſequently eaſy, we may withdraw the the original excitation, and the exertion will ſtill continue. In learning, for inſtance, a new language, at firſt, while the pupil is in the midſt of the difficulties of regular and irregular verbs, and when, in tranſlation, a dictionary is wanted at every moment, the occupation itſelf cannot be very agreeable, but we are excited by the hope that our labour will every day diminiſh, and that we ſhall at laſt enjoy the entertainment of reading uſeful and agreeable books. Children, who have not learnt by experience the pleaſures of literature, cannot feel this hope as ſtrongly as we do, we therefore excite them by praiſe; but by degrees they begin to feel the pleaſure of ſucceſs and occupation; when theſe are felt, we may and ought to withdraw the unneceſſary excitements of praiſe. If we continue it, we miſlead the child's mind, and whilſt we deprive him of his natural reward, we give him a factitious taſte. When any moral habit is to be acquired, or when we wiſh that our pupil ſhould cure himſelf of any fault, we muſt employ at firſt ſtrong excitement, and

reward with warmth and eloquence of approbation; when the fault is conquered, when the virtue is acquired, the extraordinary excitement ſhould be withdrawn, and this ſhould not be done with an air of myſtery and artifice; the child ſhould know all that we do, and why we do it; the ſooner he learns how his own mind is managed the better, the ſooner he will aſſiſt in his own education.

Every body muſt have obſerved, that languor of mind ſucceeds to the intoxication of vanity; if we can avoid the intoxication, we ſhall avoid the languor. Common ſayings often imply thoſe ſenſible obſervations which philoſophers, when they theorize, only expreſs in other words. We frequently hear it ſaid to a child, "Praiſe "ſpoils you; my praiſe did you harm; you can't "bear praiſe well; you grow conceited; you be- "come idle; you are good for nothing, becauſe "you have been too much flattered." All theſe expreſſions ſhow, that the conſequences of over ſtimulating the mind by praiſe have been vaguely taken notice of in education; but no general rules have been deduced from theſe

obſervations. With children of different habits and temperaments the ſame degree of excitement acts differently, ſo that it is ſcarcely poſſible to fix upon any poſitive quantity fit for all diſpoſitions; the quantity muſt be relative; but we may, perhaps, fix upon a criterion by which, in moſt caſes, the proportion may be aſcertained. The golden rule * which an eminent phyſician has given to the medical world for aſcertaining the neceſſary and uſeful quantity of ſtimulus for weak and feveriſh patients, may, with advantage, be applied in education. Whenever praiſe produces the intoxication of vanity, it is hurtful; whenever the appearances of vanity diminiſh in conſequence of praiſe, we may be ſatisfied that it does good, that it increaſes the pupil's confidence in himſelf, and his ſtrength of mind. We repeat that perſons who have confidence in themſelves may be proud, but are never vain of thoſe qualities of which they are in certain poſſeſſion; that vanity cannot ſupport herſelf without the concurring flattery of others; pride is ſatisfied with his own approba-

* See Zoonomia, vol. i. p. 99.

tion. In the education of children who are more inclined to pride than to vanity, we muſt preſent large objects to the underſtanding, and large motives muſt be uſed to excite voluntary exertion. If the underſtanding of proud people be not early cultivated, they frequently fix upon ſome falſe ideas of honour or dignity, to which they are reſolute martyrs through life. Thus the high born Spaniards, if we may be allowed to reaſon from the imperfect hiſtory of national character, who aſſociate the ideas of dignity and indolence, would rather ſubmit to the evils of poverty, than to the imaginary diſgrace of working for their bread. Volney, and the baron de Tott, give us ſome curious inſtances of the pride of the Turks, which prevents them from being taught any uſeful arts by foreigners. To ſhew how early falſe aſſociations are formed and ſupported by pride, we need but recur to the anecdote of the child mentioned by de Tott*, who bought a pretty toy as a preſent for a little Turkiſh friend, but the child was too proud to ſeem pleaſed with

* V. De Tott's Memoirs, p. 138, a note.

the toy; the child's grandfather came into the room, ſaw, and was delighted with the toy, ſat down on the carpet, and played with it till he broke it. We like the ſecond childhood of the grandfather better than the premature old age of the grandſon.

The ſelf-command which the fear of diſgrace inſures can produce either great virtues, or great vices. Revenge and generoſity are, it is ſaid, to be found in their higheſt ſtate amongſt nations and individuals characterized by pride. The early objects which are aſſociated with the idea of honour in the mind are of great conſequence; but it is of yet more conſequence to teach proud minds early to bend to the power of reaſon, or rather to glory in being governed by reaſon. They ſhould be inſtructed, that the only poſſible means of maintaining their opinions amongſt perſons of ſenſe is to ſupport them by unanſwerable arguments. They ſhould be taught that, to ſecure reſpect, they muſt deſerve it; and their ſelf-denial, or ſelf-command, ſhould never obtain that tacit admiration which they moſt value, except where it is exerted for uſeful

and rational purpoſes. The conſtant cuſtom of appealing, in the laſt reſort, to their own judgment, which diſtinguiſhes the proud from the vain, makes it peculiarly neceſſary that the judgment, to which ſo much is truſted, ſhould be highly cultivated. A vain man may be tolerably well conducted in life by a ſenſible friend; a proud man ought to be able to conduct himſelf perfectly well, becauſe he will not accept of any aſſiſtance. It ſeems that ſome proud people confine their benevolent virtues within a ſmaller ſphere than others; they value only their own relations, their friends, their country, or whatever is connected with themſelves. This ſpecies of pride may be corrected by the ſame means which are uſed to increaſe ſympathy. Thoſe, who either from temperament, example, or accidental circumſtances have acquired the habit of repreſſing and commanding their emotions, muſt be carefully diſtinguiſhed from the ſelfiſh and inſenſible. In the preſent times, when the affectation of ſenſibility is to be dreaded, we ſhould rather encourage that ſpecies of pride which diſdains to diſplay the affections

of the heart. "You Romans triumph over "your tears, and call it virtue! I triumph in "my tears," ſays Caractacus: his tears were reſpectable, but in general the Roman triumph would command the moſt ſympathy.

Some people attribute to pride all expreſſions of confidence in oneſelf: theſe may be offenſive to common ſociety, but they are ſometimes powerful over the human mind, and where they are genuine, mark ſomewhat ſuperior in character. Much of the effect of lord Chatham's eloquence, much of his tranſcendent influence in public, muſt be attributed to the confidence which he ſhewed in his own ſuperiority. "I trample upon impoſſibilities!" was an exclamation which no inferior mind would dare to make. Would the houſe of commons have permitted any one but lord Chatham to have anſwered an oration by "Tell me, gentle "ſhepherd, where?" The danger of failing, the hazard that he runs of becoming ridiculous who verges upon the moral ſublime, is taken into our account when we judge of the action, and we pay involuntary tribute to courage and

ſucceſs: but how miſerable is the fate of the man who miſtakes his own powers, and upon trial is unable to ſupport his aſſumed ſuperiority; mankind revenge themſelves without mercy upon his ridiculous pride, eager to teach him the difference between inſolence and magnanimity. Young people inclined to overrate their own talents, or to undervalue the abilities of others, ſhould frequently have inſtances given to them from real life of the mortifications and diſgrace to which imprudent boaſters expoſe themſelves. Where they are able to demonſtrate their own abilities, they run no riſk in ſpeaking with decent confidence; but where their ſucceſs depends, in any degree, either upon their fortune, or opinion, they ſhould never run the hazard of preſumption. Modeſty prepoſſeſſes mankind in favour of its poſſeſſor, and has the advantage of being both graceful and ſafe: this was perfectly underſtood by the crafty Ulyſſes, who neither raiſed his eyes, nor ſtretched his ſceptred hand, "when he firſt roſe to "ſpeak." We do not, however, recommend this artificial modeſty; its trick is ſoon diſco-

vered, and its ſameneſs of diſſimulation preſently diſguſts. Prudence ſhould prevent young people from hazardous boaſting; and good nature, and good ſenſe, which conſtitute real politeneſs, will reſtrain them from obtruding their merits to the mortification of their companions: but we do not expect from them total ignorance of their own comparative merit. The affectation of humility, when carried to the extreme, to which all affectation is liable to be carried, appears full as ridiculous as troubleſome, and offenſive as any of the graces of vanity, or the airs of pride. Young people are cured of preſumption by mixing with ſociety, but they are not ſo eaſily cured of any ſpecies of affectation.

As the fair ſex is more liable to the latter failing than to the former, we have endeavoured in the chapter on female accompliſhments to point out, that the enlargement of underſtanding in the fair ſex, which muſt reſult from their increaſing knowledge, will neceſſarily correct the feminine foibles of vanity and affectation.

Strong, prophetic, eloquent praiſe, like that which the great lord Chatham beſtowed on his

ſon, would rather inſpire in a generous ſoul noble emulation, than paltry vanity. "On this "boy," ſaid he, laying his hand upon his ſon's head, "deſcends my mantle, with a double portion of my ſpirit!" Philip's praiſe of his ſon Alexander, when the boy rode the unmanageable horſe*, is another inſtance of the kind of praiſe capable of exciting ambition.

As to ambition, we muſt decide what ſpecies of ambition we mean, before we can determine whether it ought to be encouraged or repreſſed, whether it ſhould be claſſed amongſt virtues or vices; that is to ſay, whether it adds to the happineſs or the miſery of human creatures. "The inordinate deſire of fame," which often deſtroys the lives of millions when it is connected with ideas of military enthuſiaſm, is juſtly claſſed amongſt the "*diſeaſes of volition:*" for its deſcription and cure we refer to Zoonomia, vol. ii. Achilles will there appear to his admirers, perhaps, in a new light.

The ambition to riſe in the world uſually implies a mean ſordid deſire of riches, or what are

* V. Plutarch.

called honours, to be obtained by the common arts of political intrigue, by cabal to win popular favour, or by addreſs to conciliate the patronage of the great. The experience of thoſe who have been governed during their lives by this paſſion, if paſſion it may be called, does not ſhew that it can confer much happineſs either in the purſuit, or attainment of its objects. See Bubb Doddington's Diary, a moſt uſeful book, a journal of the petty anxieties, and conſtant dependence, to which an ambitious courtier is neceſſarily ſubjected. See alſo Mirabeau's "Secret Hiſtory of the Court of Berlin" for a picture of a man of great abilities degraded by the ſame ſpecies of low unprincipled competition. We may find, in theſe books, it is to be hoped, examples which will ſtrike young and generous minds, and which may inſpire them with contempt for the objects and the means of vulgar ambition. There is a more noble ambition, by which the enthuſiaſtic youth, perfect in the theory of all the virtues, and warm with yet unextinguiſhed benevolence, is apt to be ſeized; his heart beats with the hope

of immortalizing himſelf by noble actions; he forms extenſive plans for the improvement and the happineſs of his fellow-creatures; he feels the want of power to carry theſe into effect; power becomes the object of his wiſhes. In the purſuit of this object, how are his feelings changed? Mr. Necker, in the preface to his work on French finance *, paints, with much eloquence, and with an appearance of perfect truth, the feelings of a man of virtue and genius, before and after the attainment of political power. The moment when a miniſter takes poſſeſſion of his place, ſurrounded by crowds and congratulations, is well deſcribed; and the ſucceeding moment, when clerks with immenſe portfolios enter, is a ſtriking contraſt. Examples from romance can never have ſuch a powerful effect upon the mind as thoſe which are taken from real life; but in proportion to the juſt and lively repreſentation of ſituations, and paſſions reſembling reality, fictions may convey uſeful moral leſſons. In the Cyropædia

* Necker de l'Adminiſtration des Finances de la France, vol. i. p. 98.

there is an admirable deſcription of the day ſpent by the victorious Cyrus, giving audience to the unmanageable multitude after the taking of Babylon had accompliſhed the fulneſs of his ambition *.

It has been obſerved, that theſe examples of the inſufficiency of ambition ſeldom make any laſting impreſſion upon the minds of the ambitious. This may ariſe from two cauſes; from the reaſoning faculty's not having been ſufficiently cultivated, or from the habits of ambition being formed before proper examples are preſented to the judgment for compariſon. Some ambitious people, when they reaſon coolly, acknowledge and feel the folly of their purſuits, but ſtill from the force of habit they act immediately in obedience to the motives which they condemn: others, who have never been accuſtomed to reaſon firmly, believe themſelves to be in the right in the choice of their objects; and they cannot comprehend the arguments which are uſed by thoſe, who have not the ſame way of thinking as themſelves. If

* Cyropædia, vol. ii. page 303.

we fairly place facts before young people, who have been habituated to reaſon, and who have not yet been inſpired with the paſſion, or enſlaved by the habits of vulgar ambition, it is probable, that they will not be eaſily effaced from the memory, and that they will influence the conduct through life.

It ſometimes happens to men of a ſound underſtanding, and a philoſophic turn of mind, that their ambition decreaſes with their experience. They begin perhaps with ſome ardour an ambitious purſuit; but by degrees they find the pleaſure of the occupation ſufficient without the fame, which was their original object. This is the ſame proceſs which we have obſerved in the minds of children with reſpect to the pleaſures of literature, and the taſte for ſugar-plums.

Happy the child who can be taught to improve himſelf without the ſtimulus of ſweetmeats! Happy the man who can preſerve activity without the excitements of ambition!

CHAPTER XII.

BOOKS.

THE firſt books which are now uſually put into the hands of a child are Mrs. Barbauld's Leſſons; they are by far the beſt books of the kind that have ever appeared; thoſe only who know the difficulty, and the importance of ſuch compoſitions in education, can ſincerely rejoice, that the admirable talents of ſuch a writer have been employed in ſuch a work. We ſhall not apologize for offering a few remarks on ſome paſſages in theſe little books, becauſe we are convinced that we ſhall not offend.

Leſſons for children from three to four years old ſhould, we think, have been leſſons for children from four to five years old; few read, or ought to read, before that age.

"Charles ſhall have a pretty new leſſon."

In this ſentence the words pretty and new are aſſociated; but they repreſent ideas which ought to be kept ſeparate in the mind of a child. The love of novelty is cheriſhed in the minds of children by the common expreſſions that we uſe to engage them to do what we deſire. "You ſhall "have *a new* whip, *a new* hat," are improper modes of expreſſion to a child. We have ſeen a boy who had literally twenty new whips in one year, and we were preſent when his father to comfort him when he was in pain, went out to buy him *a new* whip, though he had two or three ſcattered about the room.

The deſcription, in the firſt part of Mrs. Barbauld's Leſſons of the naughty boy who tormented the robin, and who was afterwards ſuppoſed to be eaten by bears, is more objectionable than any in the book: the idea of killing is in itſelf very complex, and if explained, ſerves only to excite terror; and how can a child be made to comprehend why a cat *ſhould* catch mice, and not kill birds? or why ſhould this ſpecies of honeſty be expected from an animal of prey?

"I want my dinner."

Does Charles take it for granted, that what he eats is his own, and that he *muſt* have his dinner? Theſe and ſimilar expreſſions are words of courſe; but young children ſhould not be allowed to uſe them: if they are permitted to aſſume the tone of command, the feelings of impatience and ill temper quickly follow, and children become the little tyrants of a family. Property is a word of which young people have general ideas, and they may with very little trouble be prevented from claiming things to which they have no right. Mrs. Barbauld has judiciouſly choſen to introduce a little boy's daily hiſtory in theſe books; all children are extremely intereſted for Charles, and they are very apt to expect that every thing which happens to him is to happen to them; they believe that every thing he does is right; therefore, his biographer ſhould in another edition reviſe any of his expreſſions which may miſlead the future tribe of his little imitators. All the paſſages which might have been advantageouſly omitted in theſe excellent little books, have been carefully

obliterated before they were put into the hands of children, by a mother who knew the danger of early falſe aſſociations.

"Little boys don't eat butter."

"Nobody wears a hat in the houſe."

This is a very common method of ſpeaking, but it certainly is not proper towards children. Affirmative ſentences ſhould always expreſs real facts. Charles muſt know that ſome little boys do eat butter; and that ſome people wear their hats in their houſes. This mode of expreſſion, "Nobody does that!" "Every body does this!" lays the foundation for prejudice in the mind. This is the language of faſhion, which, more than conſcience, makes cowards of us all.

"I want ſome wine."

Would it not be better to tell Charles in reply to this ſpeech, that wine is not good for him, than to ſay "Wine for little boys! I never heard of ſuch a thing!" If Charles were to be ill, and it ſhould be neceſſary to give him wine; or were he to ſee another child drink it, he would loſe confidence in what was ſaid to him. We ſhould be careful of our words, if we

expect our pupils to have confidence in us; and if they have not, we need not attempt to educate them.

"The moon ſhines at night, when the ſun is gone to bed."

When the ſun is out of ſight, would be more correct, though not ſo pleaſing, perhaps, to the young reader. It is very proper to teach a child, that when the ſun diſappears, when the ſun is below the horizon, it is the time when moſt animals go to reſt; but we ſhould not do this by giving ſo falſe an idea as that the ſun is gone to bed. Every thing relative to the ſyſtem of the univerſe is above the comprehenſion of a child; we ſhould, therefore, be careful to prevent his forming erroneous opinions. We ſhould wait for a riper period of his underſtanding before we attempt poſitive inſtruction upon abſtract ſubjects.

The enumeration of the months in the year, the days in the week, of metals, &c. are excellent leſſons for a child who is juſt beginning to learn to read. The claſſification of animals into quadrupeds, bipeds, &c. is another uſeful

ſpecimen of the manner in which children ſhould be taught to generalize their ideas. The pathetic deſcription of the poor timid hare running from the hunters, will leave an impreſſion upon the young and humane heart, which may perhaps prevent much cruelty. The poetic beauty, and eloquent ſimplicity, of many of Mrs. Barbauld's Leſſons, cultivate the imagination of children, and their taſte, in the beſt poſſible manner.

The deſcription of the white ſwan, with her long arched neck, "winning her eaſy way through the waters, is beautiful; ſo is that of the nightingale, ſinging upon her lone buſh by moonlight. Poetic deſcriptions of real objects are well ſuited to children; apoſtrophe and perſonification they underſtand, but all allegoric poetry is difficult to manage for them, becauſe they miſtake the poetic attributes for reality, and they acquire falſe and confuſed ideas. With regret children cloſe Mrs. Barbauld's little books, and parents become yet more ſenſible of their value, when they perceive that none can be found immediately to ſupply their

place, or to continue the courſe of agreeable ideas which they have raiſed in the young pupil's imagination.

"Evenings at Home" do not immediately join to Leſſons for Children from three to four years old; and we know not where to find any books to fill the interval properly. The popular character of any book is eaſily learned, and its general merit eaſily aſcertained; this may ſatisfy careleſs indolent tutors, but a more minute inveſtigation is neceſſary to parents who are anxious for the happineſs of their family, or deſirous to improve the art of education. Such parents will feel it to be their duty to look over every page of a book before it is truſted to their children; it is an arduous taſk, but none can be too arduous for the enlightened energy of parental affection. We are acquainted with the mother of a family, who has never truſted any book to her children, without having firſt examined it herſelf with the moſt ſcrupulous attention; her care has been repaid with that ſucceſs in education, which ſuch care can alone enſure. We have ſeveral books before

us marked by her pencil, and volumes which, having undergone ſome neceſſary operations by her ſciſſars, would, in their mutilated ſtate, ſhock the ſenſibility of a nice librarian. But ſhall the education of a family be ſacrificed to the beauty of a page, or even to the binding of a book? Few books can ſafely be given to children without the previous uſe of the pen, the pencil, and the ſciſſars. In the books which we have before us, in their corrected ſtate, we ſee ſometimes a few words blotted out, ſometimes half a page, ſometimes many pages are cut out. In turning over the leaves of "The Children's Friend," we perceive, that the ages at which the ſtories ſhould be read have been marked; and we ſee that different ſtories have been marked with the initials of different names by this cautious mother, who conſidered the temper and habits of her children, as well as their ages.

As far as theſe notes refer peculiarly to her own family, they cannot be of uſe to the public; but the principles which governed a judicious parent in her ſelection, muſt be capa-

ble of univerſal application, and we ſhall, therefore, endeavour to explain them.

It may be laid down as a firſt principle, that we ſhould preſerve children from the knowledge of any vice, or any folly, of which the idea has never yet entered their minds, and which they are not neceſſarily diſpoſed to learn by early example. Children who have never lived with ſervants, who have never aſſociated with ill educated companions of their own age, and who in their own family have heard nothing but good converſation, and ſeen none but good examples, will in their language, their manners, and their whole diſpoſition, be not only free from many of the faults common amongſt children, but they will abſolutely have no idea that there are ſuch faults. The language of children, who have heard no language but what is good, muſt be correct. On the contrary, thoſe who hear a mixture of low and high vulgarity before their own habits are fixed, muſt, whenever they ſpeak, continually blunder; they have no rule to guide their judgment in their ſelection from the variety of

dialects which they hear; probably they may often be reproved for their miſtakes, but theſe reproofs will be of no avail, whilſt the pupils continue to be puzzled between the example of the nurſery and of the drawing-room. It will coſt much time and pains to correct theſe defects, which might have been with little difficulty prevented. It is the ſame with other bad habits. Falſehood, caprice, diſhoneſty, obſtinacy, revenge, and all the train of vices which are the conſequences of miſtaken or neglected education, which are learned by bad example, and which are not inſpired by nature, need ſcarcely be known to children whoſe minds have from their infancy been happily regulated. Such children ſhould be ſedulouſly kept from contagion; their minds are untainted; they are ſafe in that ſpecies of ignorance, which alone can deſerve the name of bliſs. No books ſhould be put into the hands of this happy claſs of children, but ſuch as preſent the beſt models of virtue: there is no occaſion to ſhock them with caricatures of vice. Such caricatures they will not even underſtand

to be well drawn, becauſe they are unacquainted with any thing like the originals. Examples to deter them from faults to which they have no propenſity muſt be uſeleſs, and may be dangerous: for the ſame reaſon that a book written in bad language ſhould never be put into the hands of a child who ſpeaks correctly, a book exhibiting inſtances of vice ſhould never be given to a child who thinks and acts properly. The love of novelty, and of imitation, is ſo ſtrong in children, that even for the pleaſure of imitating characters deſcribed in a book, or actions which ſtrike them as ſingular, they often commit real faults.

To this danger of catching faults by ſympathy, children of the greateſt ſimplicity are perhaps the moſt liable, becauſe they leaſt underſtand the nature and conſequences of the actions which they imitate.

During the age of imitation, our pupils ſhould not be expoſed to the influence of any bad examples till their habits are formed, and till they have not only the ſenſe to chooſe, but

the fortitude to abide by their own choice. It may be ſaid, that "children muſt know that "vice exiſts; that, even amongſt their own "companions, there are ſome who have bad "diſpoſitions; they cannot mix even in the "ſociety of children without ſeeing exam-"ples which they ought to be prepared to "avoid."

Theſe remarks are juſt with regard to pupils who are intended for a public ſchool, and no great nicety in the ſelection of their books is neceſſary; but we are now ſpeaking of thoſe who are to be brought up in a private family. Why ſhould they be prepared to mix in the ſociety of thoſe who have bad habits or bad diſpoſitions? Children ſhould not be educated for the ſociety of children; nor ſhould they live in that ſociety during their education. We muſt not expect from them premature prudence, and all the ſocial virtues, before we have taken any meaſures to produce theſe virtues, or this tardy prudence. In private education there is little chance that one error ſhould balance another; the experience of the

pupil is much confined, the examples which he ſees are not ſo numerous and various as to counteract each other. Nothing therefore muſt be expected from the counteracting influence of oppoſing cauſes, nothing ſhould be truſted to chance. Experience muſt preſerve one uniform tenor, and examples muſt be ſelected with circumſpection. The leſs children aſſociate with companions of their own age, and the leſs they know of the world, and the ſtronger their taſte for literature, the more forcible will be the impreſſion that will be made upon them by the pictures of life, and the characters and ſentiments which they meet with in books. Books for ſuch children ought to be *ſifted* by an academy * of enlightened parents.

Without particular examples, the moſt obvious truths are not brought home to our buſineſs. We ſhall ſelect a few examples from a work of high and deſerved reputation, from a work which we much admire, "Berquin's Children's "Friend." We do not mean to criticiſe this work as a literary production, but ſimply to

* V. Academie della Cruſca,

point out to parents, that, even in the beſt books for children, much muſt ſtill be left to the judgment of the preceptor, much in the choice of ſtories, and particular paſſages ſuited to different pupils.

In "The Children's Friend" there are ſeveral ſtories well adapted to one claſs of children, but entirely unfit for another. In the ſtory called the Hobgoblin, Antonia, a little girl "who has been told a hundred fooliſh ſtories "by her maid, particularly one about a black "faced goblin," is repreſented as making a lamentable outcry at the ſight of a chimney-ſweeper; firſt ſhe runs for refuge to the kitchen, the laſt place to which ſhe ſhould run; then to the pantry; thence ſhe jumps out of the window, "half dead with terror," and in the *elegant* language of the tranſlator, *almoſt ſplits her throat, with crying out Help! Help!* In a few minutes ſhe diſcovers her error, is heartily aſhamed, and "ever afterwards Antonia was "the firſt to laugh at ſilly ſtories, told by ſilly "people of hobgoblins, and the like, to fright "her."

For children who have had the misfortune to have heard the hundred fooliſh ſtories of a fooliſh maid, this apparition of the chimney-ſweeper is well managed; though, perhaps, ridicule might not effect ſo ſudden a cure in all caſes as it did in that of Antonia. By children who have not acquired terrors of the black faced goblin, and who have not the habit of frequenting the kitchen and the pantry, this ſtory ſhould never be read.

"The little miſs deceived by her maid," who takes mamma's keys out of her drawers, and who ſteals ſugar and tea for her maid, that ſhe may have the pleaſure of playing with a couſin whom her mother had forbidden her to ſee, is not an example that need be introduced into any well regulated family. The picture of Amelia's miſery is drawn by the hand of a maſter: terror and pity, we are told by the tragic poets, purify the mind; but there are minds that do not require this ſpecies of purification. Powerful antidotes are neceſſary to combat powerful poiſons; but where no poiſon has been imbibed, are not antidotes more dangerous than uſeful?

The young gentlemen who cheat at cards, and who pocket ſilver fiſh, ſhould have no admittance any where. It is not neceſſary to put *children* upon their guard againſt aſſociates whom they are not likely to meet; nor need we introduce the vulgar and miſchievous ſchoolboy to any but ſchoolboys. Martin, who throws ſquibs at people in the ſtreet, who faſtens rabbits tails behind their backs, who fiſhes for their wigs, who ſticks up pins in his friends chairs, who carries a hideous maſk in his pocket to frighten little children, and who is himſelf frightened into repentance by a ſpectre with a ſpeaking trumpet, is an objectionable though an excellent dramatic character. The part of the ſpectre is played by the groom: this is ill conſtrived in a drama for children; grooms ſhould have nothing to do with their entertainments; and Cæſar, who is repreſented as a pleaſing character, ſhould not be ſuppoſed to make the poſtillion a party in his inventions.

"*A good heart compenſates for many indiſcretions*" is a dangerous title for a play for young people: becauſe *many* is an indefinite term; and

in ſettling how many, the calculations of parents and children may vary materially. This little play is ſo charmingly written, the character of the imprudent and generous Frederick is ſo likely to excite imitation, that we muſt doubly regret his intimacy with the coachman, his running away from ſchool, and drinking beer at an alehouſe in a fair. The coachman is an excellent old man, he is turned away for having let maſter Frederick mount his box, aſſume the whip, and overturn a handſome carriage. Frederick, touched with gratitude and compaſſion, gives the old man all his pocket-money, and ſells a watch and ſome books to buy clothes for him. The motives of Frederick's conduct are excellent, and as they are miſrepreſented by a treacherous and hypocritical couſin, we ſympathiſe more ſtrongly with the hero of the piece; and all his indiſcretions appear, at leaſt, amiable defects. A nice obſerver* of the human heart ſays, that we are never inclined to cure ourſelves of any defect which makes us

* Marmontel. "On ne ſe guérit pas d'un défaut qui "plait."

agreeable. Frederick's real virtues will not, probably, excite imitation ſo much as his imaginary excellencies. We ſhould take the utmoſt care not to aſſociate in the mind the ideas of imprudence, and of generoſity; of hypocriſy, and of prudence: on the contrary, it ſhould be ſhewn that prudence is neceſſary to real benevolence; that no virtue is more uſeful, and conſequently more reſpectable, than juſtice. Theſe homely truths will never be attended to as the counter-check moral of an intereſting ſtory; ſtories, which require ſuch morals, ſhould therefore be avoided.

It is to be hoped, that ſelect parts of The Children's Friend, tranſlated by ſome able hand, will be publiſhed hereafter for the uſe of private families. Many of the ſtories, to which we have ventured to object, are by no means unfit for ſchoolboys, to whom the characters which are moſt exceptionable cannot be new. The vulgarity of language which are moſt exceptionable cannot be new. The vulgarity of language which we have noticed is not to be attributed to M. Berquin, but to his wretched

tranſlator. L'Ami des Enfans is, in French, moſt elegantly written. The Little Canary Bird, Little George, The Talkative Little Girl, The Four Seaſons, and many others, are excellent both in point of ſtyle and dramatic effect; they are exactly ſuited to the underſtanding of children, and they intereſt without any improbable events, or unnatural characters.

In fiction it is difficult to avoid giving children falſe ideas of virtue, and ſtill more difficult to keep the different virtues in their due proportions. This ſhould be attended to with care in all books for young people; nor ſhould we ſacrifice the underſtanding to the enthuſiaſm of eloquence, or the affectation of ſenſibility. Without the habit of reaſoning, the beſt diſpoſitions can give us no ſolid ſecurity for happineſs, therefore we ſhould early cultivate the reaſoning faculty, inſtead of always appealing to the imagination. By ſentimental perſuaſives a child may be ſucceſsfully governed for a time, but no power can continue the deluſion long. The reaſoning in the ſtories of * "Joſeph; the

* Berquin.

Flower that never fades," and " a Competence " is beſt," appear to be of the ſentimental kind. Henry gets amongſt a rabble of boys in a village to teaſe a poor man of the name of Joſeph, who has the misfortune to be out of his ſenſes. Henry's father, in a ſentimental converſation, attempts to convince him of the folly and wickedneſs of his conduct; it is ſo managed that the boy's conſcience is alarmed, and his underſtanding has no ſhare in his penitence. He aſks pardon of heaven, but preſently he joins the rabble rout again, and exaſperates the poor madman, who throws a ſtone at his tormentors, which wounds Henry's cheek, and nearly cuts off his ear. In this condition he is carried home to his father, who tells him that this is a judgment for his crime. " How comes it," ſays the bleeding boy, " that the ſtone hit my head " alone, when all the reſt of my companions are " more in fault than I?" " Becauſe," anſwers his father, " you know better than they did " that you were doing wrong." This method of reaſoning will not make children conſcientious, becauſe whenever they eſcape *judgments*,

they will imagine that they do not merit puniſh-ment; and the ſtone does not always hit the guilty head. The father's anſwer to his ſon ſhould have been, "I cannot tell why the ſtone "hit your head, but I am ſure that you deſerved "it more than your companions, becauſe you "knew better than they did that you were do-"ing wrong." In "the Flower that never fades" a weeping governeſs talks to her pupil in ſuch a ſtrain about a fault ſo horrid that ſhe cannot bring herſelf to name it, that the child becomes dumb, trembles, ſighs, and at laſt "*falls half "ſwooning, as it were, beſide a verdant hillock.*" This "deed without a name" proves to be a little childiſh vanity, which had made the young lady talk in too deciſive a tone of voice at break-faſt upon ſome hiſtorical point, ſhew her writ-ing with an air of triumph in her eyes, and put Miſs Elizabeth out by keeping bad time on the piano-forte. Mademoiſelle's eloquence ap-pears too pathetic for the occaſion, and though it "pierced the heart of the tender Emily," it might not have the ſame effect on perſons of a more phlegmatic temperament. An appeal

to the affections of a child ſhould be made only on great emergencies.

In the dialogue upon this maxim, "that a com-" petence is beſt," the reaſoning of the father is not a match for that of the ſon; by uſing leſs eloquence, the father might have made out his caſe much better. The boy ſees that many people are richer than his father, and perceiving that their riches procure a great number of conveniences and comforts for them, he aſks why his father, who is as good as theſe opulent people, ſhould not alſo be as rich. His father tells him that he is rich, that he has a large garden, and a fine eſtate; the boy aſks to ſee it, and his father takes him to the top of a high hill, and ſhewing him an extenſive proſpect, ſays to him, "All "this is my eſtate." The boy croſs queſtions his father, and finds out that it is not his eſtate, but that he may enjoy the pleaſure of looking at it, and that he can buy wood when he wants it for firing; veniſon, without hunting the deer himſelf; fiſh, without fiſhing; and butter, without poſſeſſing all the cows that graze in the valley; therefore he calls himſelf maſter of the woods,

the deer, the herds, the huntſmen, and the labourers that he beholds. This is* poetic philoſophy, but it is not ſufficiently accurate for a child; it would confound his ideas of property, and it would be immediately contradicted by his experience. The father's reaſoning is perfectly good, and well adapted to his pupil's capacity, when he aſks "whether he ſhould not require a "ſuperfluous appetite to enjoy ſuperfluous "diſhes at his meals." In returning from his walk, the boy ſees a mill that is out of repair, a meadow that is flooded, and a quantity of hay ſpoiled, he obſerves that the owners of theſe things muſt be ſadly vexed by ſuch accidents, and his father congratulates himſelf upon their not being his property. Here is a direct contradiction; for a few minutes before he had aſſerted that they belonged to him. Property is often the cauſe of much anxiety to its poſſeſſor, but the queſtion is, whether the pains, or the pleaſures of poſſeſſing it predominate; if this queſtion could not be fully diſcuſſed, it ſhould

* V. Hor. 2 Epiſt. lib. ii,

not be partially ſtated. To ſilence a child in argument is eaſy, to convince him is difficult; ſophiſtry or wit ſhould never be uſed to confound the underſtanding. Reaſon has equal force from the lips of the giant and of the dwarf.

Theſe minute criticiſms may appear invidious, but it is hoped that they will be conſidered only as illuſtrations of general principles; illuſtrations neceſſary to our ſubject. We have choſen M. Berquin's work becauſe of its univerſal popularity; probably all the examples which have been ſelected are in the recollection of moſt readers, or at leaſt it is eaſy to refer to them, becauſe "The Children's Friend" is to be found in every houſe where there are any children. The principles by which we have examined Berquin may be applied to all books of the ſame claſs. The ſuperior merit of Sandford and Merton has long been well known to the public; Madame de Silleri's Theatre of Education, and her Tales of the Caſtle, Madame de la Fite's Tales and Converſations, Mrs. Smith's Rural Walks, with many other

popular books for children, would deſerve a ſeparate analyſis, if literary criticiſm were our object. A critic once, with indefatigable ill-nature, picked out all the faults of a beautiful poem, and preſented them to Apollo. The god ordered a buſhel of his beſt Parnaſſian wheat to be carefully winnowed, and he preſented the critic with the chaff. Our wiſh is to ſeparate the ſmall portion of what is uſeleſs from the excellent nutriment contained in the books we have mentioned.

With reſpect to ſentimental ſtories, and books of mere entertainment, we muſt remark, that they ſhould be ſparingly uſed, eſpecially in the education of girls. This ſpecies of reading cultivates what is called the heart prematurely, lowers the tone of the mind, and induces indifference for thoſe common pleaſures and occupations which, however trivial in themſelves, conſtitute by far the greateſt portion of our daily happineſs. Stories are the novels of childhood. We know, from common experience, the effects which are produced upon the female mind by immoderate novel-reading. To

thoſe who acquire this taſte every object becomes diſguſting, which is not in an attitude for poetic painting; a ſpecies of moral picturesque is ſought for in every ſcene of life, and this is not always compatible with ſound ſenſe, or with ſimple reality. Gainſborough's country girl, as it has been humorouſly * remarked, is "a much more picturesque object than a girl "neatly dreſſed in a clean white frock, but for "this reaſon are all children to go in rags?" A tragedy heroine, weeping, ſwooning, dying, is a moral-picturesque object; but the frantic paſſions, which have the beſt effect upon the ſtage, might, when exhibited in domeſtic life, appear to be drawn upon too large a ſcale to pleaſe. The difference between reality and fiction is ſo great, that thoſe who copy from any thing but nature are continually diſpoſed to make miſtakes in their conduct, which appear ludicrous to the impartial ſpectator. Pathos depends on ſuch nice circumſtances, that domeſtic ſentimental diſtreſſes are

* V. A Letter of Mr. Wyndham's to Mr. Repton, in Repton on Landſcape Gardening.

in a perilous ſituation, the ſympathy of their audience is not always in the power of the fair performers. Phrenzy itſelf may be turned to farce *. "*Enter* the princeſs mad in white "ſattin, and her attendant mad in white li-"nen."

Beſides the danger of creating a romantic taſte, there is reaſon to believe, that the ſpecies of reading to which we object has an effect directly oppoſite to what it is intended to produce. It diminiſhes, inſtead of increaſing, the ſenſibility of the heart; a combination of romantic imagery is requiſite to act upon the aſſociations of ſentimental people, and they are virtuous only when virtue is in perfectly good taſte. An eloquent philoſopher † obſerves, that in the deſcription of ſcenes of diſtreſs in romance and poetry the diſtreſs is always made *elegant*; the imagination, which has been accuſtomed to this delicacy in fictitious narrations, revolts from the diſguſting circumſtances which attend real poverty, diſeaſe, and miſery; the emotions of pity, and the exertions of benevolence, are

* The Critic. † Profeſſor Stewart.

conſequently repreſſed preciſely at the time when they are neceſſary to humanity.

With reſpect to pity, it is a ſpontaneous natural emotion, which is ſtrongly felt by children, but they cannot properly be ſaid to feel benevolence till they are capable of reaſoning. Charity muſt in them be a doubtful virtue; they cannot be competent judges as to the general utility of what they give. Perſons of the moſt enlarged underſtanding find it neceſſary to be extremely cautious in charitable donations, leſt they ſhould do more harm than good. Children cannot ſee beyond the firſt link in the chain which holds ſociety together; at the beſt, then, their charity can be but a partial virtue. But in fact children have nothing to give; they think that they give when they diſpoſe of the property of their parents; they ſuffer no privation by this ſort of generoſity, and they learn oſtentation, inſtead of practiſing ſelf-denial. Berquin, in his excellent ſtory of "The Little "Needle Woman," has made the children give their own work; here the pleaſure of employment is immediately connected with the gra-

tification of benevolent feelings; their pity is not merely paſſive, it is active and uſeful.

In fictitious narratives affection for parents, and for brothers and ſiſters, is often painted in agreeable colours, to excite the admiration and ſympathy of children. Caroline the charming little girl, who gets upon a chair to wipe away the tears that trickle down her elder ſiſter's cheek when her mother is diſpleaſed with her*, forms a natural and beautiful picture; but the deſire to imitate Caroline muſt produce affectation. All the ſimplicity of youth is gone the moment children perceive, that they are extolled for the expreſſion of fine feelings, and fine ſentiments. Gratitude, eſteem, and affection, do not depend upon the table of conſanguinity; they are involuntary feelings, which cannot be raiſed at pleaſure by the voice of authority; they will not obey the dictates of intereſt, they ſecretly deſpiſe the anathemas of ſentiment. Eſteem and affection are the neceſſary conſequences of a certain courſe of conduct, combined with certain external circum-

* Berquin.

ſtances which are, more or leſs, in the power of every individual. To arrange theſe circumſtances prudently, and to purſue a proper courſe of conduct ſteadily, ſomething more is neceſſary than the tranſitory impulſe of ſenſibility, or of enthuſiaſm.

There is a claſs of books which amuſe the imagination of children without acting upon their feelings. We do not allude to fairy tales, for we apprehend that theſe are not now much read, but we mean voyages and travels; theſe intereſt young people univerſally. Robinſon Cruſoe, Gulliver, and the three Ruſſian Sailors, who were caſt away upon the coaſt of Norway, are general favourites. No child ever read an account of a ſhipwreck, or even a ſtorm, without pleaſure. A deſert iſland is a delightful place, to be equalled only by the ſkating land of the rein-deer, or by the valley of diamonds in the Arabian tales. Savages, eſpecially if they be cannibals, are ſure to be admired, and the more hair-breadth eſcapes the hero of the tale has ſurvived, and the more marvellous his adventures, the more ſympathy he excites.

Will it be thought to proceed from a ſpirit of contradiction if we remark, that this ſpecies of reading ſhould not early be choſen for boys of an enterpriſing temper, unleſs they are intended for a ſeafaring life, or for the army. The taſte for adventure is abſolutely incompatible with the ſober perſeverance neceſſary to ſucceſs in any other liberal profeſſion. To girls this ſpecies of reading cannot be as dangerous as it is to boys; girls muſt ſoon perceive the impoſſibility of their rambling about the world in queſt of adventures; and where there appears an obvious impoſſibility in gratifying any wiſh, it is not likely to become, or at leaſt to continue, a torment to the imagination. Boys on the contrary, from the habits of their education, are prone to admire, and to imitate, every thing like enterpriſe and heroiſm. Courage and fortitude are the virtues of men, and it is natural that boys ſhould deſire, if they believe that they poſſeſs theſe virtues, to be placed in thoſe great and extraordinary ſituations which can diſplay them to advantage. The taſte for adventure is not repreſſed in boys by the impoſ-

ſibility of its indulgence, the world is before them, and they think that fame promiſes the higheſt prize to thoſe who will moſt boldly venture in the lottery of fortune: the rational probability of ſucceſs few young people are able, fewer ſtill are willing, to calculate;* and the calculations of prudent friends have little power over their underſtandings, or at leaſt over their imagination, the part of the underſtanding which is moſt likely to decide their conduct. From general maxims we cannot expect that young people ſhould learn much prudence; each individual admits the propriety of the rule, yet believes himſelf to be a privileged exception. Where any prize is ſuppoſed to be in the gift of fortune, every man, or every young man, takes it for granted that he is a favourite, and that it will be beſtowed upon him. The profits of commerce and of agriculture, the profits of every art and profeſſion, can be eſtimated with tolerable accuracy; the value of activity, application, and abilities, can be reſpectively meaſured by ſome certain ſtand-

* Smith. Eſſay on the Wealth of Nations.

ard. Modeſt, or even prudent people, will ſcruple to rate themſelves in all of theſe qualifications ſuperior to their neighbours; but every man will allow that, in point of good fortune, at any game of chance, he thinks himſelf upon a fair level with every other competitor.

When a young man deliberates upon what courſe of life he ſhall follow, the patient drudgery of a trade, the laborious mental exertions requiſite to prepare him for a profeſſion, muſt appear to him in a formidable light, compared with the alluring proſpects preſented by an adventuring imagination. At this time of life it will be too late ſuddenly to change the taſte; it will be inconvenient, if not injurious, to reſtrain a young man's inclinations by force or authority; it will be imprudent, perhaps fatally imprudent, to leave them uncontrolled. Precautions ſhould therefore be taken long before this period, and the earlier they are taken the better. It is not idle refinement to aſſert, that the firſt impreſſions which are made upon the imagination, though they may

be changed by ſubſequent circumſtances, yet are diſcernible in every change, and are ſeldom entirely effaced from the mind, though it may be difficult to trace them through all their various appearances. A boy, who at ſeven years old longs to be Robinſon Cruſoe, or Sindbad the ſailor, may at ſeventeen retain the ſame taſte for adventure and enterprize, though mixed ſo as to be leſs obvious, with the incipient paſſions of avarice and ambition; he has the ſame diſpoſitions modified by a ſlight knowledge of real life, and guided by the manners and converſation of his friends and acquaintance. Robinſon Cruſoe and Sindbad will no longer be his favourite heroes; but he will now admire the ſoldier of fortune, the commercial adventurer, or the nabob who has diſcovered in the eaſt the ſecret of Aladdin's wonderful lamp; and who has realiſed the treaſures of Aboulcaſem.

The hiſtory of realities written in an entertaining manner appears not only better ſuited to the purpoſes of education, but alſo more agreeable to young people than improbable fic-

tions. We have ſeen the reaſons why it is dangerous to pamper the taſte early with mere books of entertainment; to voyages and travels we have made ſome objections. Natural hiſtory is a ſtudy particularly ſuited to children: it cultivates their talents for obſervation, applies to objects within their reach, and to objects which are every day intereſting to them. The hiſtories of the bee, the ant, the caterpillar, the butterfly, the ſilk worm, are the firſt things that pleaſe the taſte of children, and theſe are the hiſtories of realities.

No one can be ſo injudicious, or ſo unjuſt, as to claſs the excellent "Evenings at Home" amongſt books of mere entertainment. Upon a cloſe examination, it appears to be the beſt book for young people from ſeven to ten years old, that has yet appeared. We ſhall not pretend to enter into a minute examination of it; becauſe, from what we have already ſaid, parents can infer our ſentiments, and we wiſh to avoid tedious, unneceſſary detail. We ſhall, however, juſt obſerve, that the leſſons on natural hiſtory, on metals, and on chemiſtry, are

particularly uſeful, not ſo much from the quantity of knowledge which they contain, as by the agreeable manner in which it is communicated: the mind is opened to extenſive views, at the ſame time that nothing above the comprehenſion of children is introduced. The mixture of moral and ſcientific leſſons is happily managed ſo as to relieve the attention; ſome of the moral leſſons contain ſound argument, and ſome diſplay juſt views of life. "Perſeverance againſt Fortune," "The Price "of Victory," "Eyes and no Eyes," have been generally admired as much by children as by parents.

The "Converſations d'Emile" are elegantly written, and the characters of the mother and child admirably well preſerved. White of Selborne's Naturaliſt's Calendar we can recommend with entire approbation: it is written in a familiar, yet elegant ſtyle; and the journal form gives it that air of reality, which is ſo agreeable and intereſting to the mind.

Smellie's Natural Hiſtory is a uſeful, entertaining book; but it *muſt* be carefully looked

over, and many pages and half pages muſt be entirely ſacrificed. And here one general caution may be neceſſary. It is hazarding too much to make children promiſe not to read parts of any book which is put into their hands; when the book is too valuable in a parent's eſtimation to be cut or blotted, let it not be given to children when they are alone: in a parent's preſence there is no danger, and the children will acquire the habit of reading the paſſages that are ſelected without feeling curioſity about the reſt. As young people grow up they will judge of the ſelections that have been made for them; they will perceive why ſuch a paſſage was fit for their underſtanding at one period, which they could not have underſtood at another. If they are *never* forced to read what is tireſome, they will anxiouſly deſire to have paſſages ſelected for them, and they will not imagine that their parents are capricious in theſe ſelections; but they will, we ſpeak from experience, be ſincerely grateful to them for the time and trouble beſtowed in procuring their literary amuſements.

When young people have eſtabliſhed their character for truth and exact integrity, they ſhould be entirely truſted with books as with every thing elſe. A ſlight pencil line at the ſide of the page will then be all that is neceſſary to guide them to the beſt parts of any book. Suſpicion would be as injurious, as too eaſy a faith is imprudent: confidence confirms integrity; but the habits of truth muſt be formed before dangerous temptations are preſented. We intended to have given a liſt of books, and to have named the pages in ſeveral authors, which have been found intereſting to children from ſeven, to nine or ten years old. The Reviews, The Annual Regiſters, Enfield's Speaker, *Elegant Extracts*, The papers of the Mancheſter Society, The French Academy of Sciences, Prieſtley's Hiſtory of Viſion, and parts of the Works of Franklin, of Chaptal, Lavoiſier, and Darwin, have ſupplied us with our beſt materials. Some periodical papers from the World, Rambler, Guardian, and Adventurer, have been choſen: theſe are books with which all libraries are furniſhed. But we forbear to offer any liſt; the

paſſages we ſhould have mentioned have been found to pleaſe in one family, but we are ſenſible, that as circumſtances vary, the choice of books for different families ought to be different. Every parent muſt be capable of ſelecting thoſe paſſages in books which are moſt ſuited to the age, temper, and taſte of their children. Much of the ſucceſs, both of literary and moral education, will depend upon our ſeizing the happy moments for inſtruction; moments when knowledge immediately applies to what children are intent upon themſelves; the ſtep which is to be taken by the underſtanding ſhould immediately follow that which has already been ſecured. By watching the turn of mind, and by attending to the converſation of children, we may perceive exactly what will ſuit them in books; and we may preſerve the connexion of their ideas without fatiguing their attention. A paragraph read aloud from the newſpaper of the day, a paſſage from any book which parents happen to be reading themſelves, will catch the attention of the young people in a family, and will perhaps excite more talk and

more curioſity, than could be given by whole volumes read at times when the mind is indolent or intent upon other occupations.

The cuſtom of reading aloud for a great while together is extremely fatiguing to children, and hurtful to their underſtandings; they learn to read on without the ſlighteſt attention or thought; the more fluently they read, the worſe it is for them; for their preceptors, whilſt words and ſentences are pronounced with tolerable emphaſis, never ſeem to ſuſpect that the reader can be tired, or that his mind may be abſent from his book. The monotonous tones which are acquired by children, who read a great deal aloud, are extremely diſagreeable, and the habit cannot eaſily be broken; we may obſerve, that children who have not acquired bad cuſtoms always read as they ſpeak, when they underſtand what they read; but the moment they come to any ſentence which they do not comprehend, their voice alters, and they read with heſitation, or with falſe emphaſis; to theſe ſignals a preceptor ſhould always attend, and the paſſage ſhould be explained before the pupil is taught to read it in

a muſical tone, or with the proper emphaſis: thus children ſhould be taught to read by the underſtanding, and not merely by the ear. Dialogues, dramas, and well written narratives, they always read *well*, and theſe ſhould be their exerciſes in the art of reading: they ſhould be allowed to put down the book as ſoon as they are tired; but an attentive tutor will perceive when they ought to be ſtopped, *before* the utmoſt point of fatigue. We have heard a a boy of nine years old, who had never been taught elocution by any reading maſter, read ſimple pathetic paſſages, and natural dialogues in "Evenings at Home," in a manner which would have made even Sterne's critic forget his ſtop watch. By reading much at a time, it is true, that a great number of books are run through in a few years; but this is not at all our object; on the contrary, our greateſt difficulty has been to find a ſufficient number of books fit for children to read. If they early acquire a ſtrong taſte for literature, no matter how few authors they may have peruſed. We have often heard young people exclaim, "I'm

"glad I have not read ſuch a book. I have a "great pleaſure to come!" Is not this better than to ſee a child yawn over a work, and count the number of tireſome pages, whilſt he ſays, "I ſhall have got through this book by and by; "and what muſt I read when I have done "this? I believe I never ſhall have read all I am "to read! What a number of tireſome books "there are in the world! I wonder what can be "the reaſon that I muſt read them all! If I "were but allowed to ſkip the pages that I "don't underſtand, I ſhould be much happier, "for when I come to any thing entertaining in "a book, I can keep myſelf awake, and then I "like reading as well as any body does."

Far from forbidding to ſkip the incomprehenſible pages, or to cloſe the tireſome volume, we ſhould exhort our pupils never to read one ſingle page that tires, or that they do not fully underſtand. We need not fear, that, becauſe an excellent book is not intereſting at one period of education, it ſhould not become intereſting at another; the child is always the beſt judge of what is ſuited to his preſent capacity.

If he ſays, "Such a book tires me;" the preceptor ſhould never anſwer with a forbidding, reproachful look, "I am ſurpriſed at that, it is no "great proof of your taſte; the book, which you "ſay tires you, is written by one of the beſt "authors in the Engliſh language." The boy is ſorry for it, but he cannot help it; and he concludes, if he be of a timid temper, that he has no taſte for literature, ſince the beſt authors in the Engliſh language tire him. It is in vain to tell him that the book is "univerſally allow-"ed to be very entertaining."

"If it be not ſuch to me,
"What care I how fine it be!"

The more encouraging, and more judicious parent would anſwer upon a ſimilar occaſion, "You are right not to read what tires you, my "dear; and I am glad that you have ſenſe "enough to tell me that this book does not en-"tertain you, though it is written by one of the "beſt authors in the Engliſh language. We do "not think at all the worſe of your taſte and un-"derſtanding; we know that the day will come

"when this book will probably entertain you; "put it by till then, I adviſe you."

It may be thought that young people, who read only thoſe parts of books which are entertaining, or thoſe which are ſelected for them are in danger of learning a taſte for variety, and deſultory habits which may prevent their acquiring accurate knowledge upon any ſubject; and which may render them incapable of that literary application, without which nothing can be well learned. We hope the candid preceptor will ſuſpend his judgment, till we can explain our ſentiments upon this ſubject more fully, when we examine the nature of invention and memory.

The ſecret fear, that ſtimulates parents to compel their children to conſtant application to certain books, ariſes from the opinion, that much chronological and hiſtorical knowledge muſt at all events be acquired during a certain number of years. The knowledge of hiſtory is thought a neceſſary accompliſhment in one ſex, and an eſſential part of education in the other. We ought, however, to diſtin-

guiſh between that knowledge of hiſtory and of chronology which is really uſeful, and that which is acquired merely for parade. We muſt call that uſeful knowledge which enlarges the view of human life, and of human nature, which teaches by the experience of the paſt, what we may expect in future. To ſtudy hiſtory as it relates to theſe objects, the pupil muſt have acquired much previous knowledge; the habit of reaſoning, and the power of combining diſtant analogies. The works of Hume, of Robertſon, Gibbon, or Voltaire, can be properly underſtood only by well informed and highly cultivated underſtandings. Enlarged views of policy, ſome knowledge of the intereſts of commerce, of the progreſs and ſtate of civilization, and literature in different countries, are neceſſary to whoever ſtudies theſe authors with real advantage. Without theſe the fineſt ſenſe, and the fineſt writing, muſt be utterly thrown away upon the reader. Children, conſequently, under the name of faſhionable hiſtories, often read what to them is abſolute nonſenſe: they have very little motive for the

ſtudy of hiſtory, and all that we can ſay to keep alive their intereſt, amounts to the common argument, "that ſuch information will be uſe-"ful to them hereafter, when they hear hiſtory "mentioned in converſation."

Some people imagine, that the memory reſembles a ſtorehouſe, in which we ſhould early lay up facts; and they aſſert, that, however uſeleſs theſe may appear at the time when they are layed up, they will afterwards be ready for ſervice at our ſummons. One alluſion may be fairly anſwered by another, ſince it is impoſſible to oppoſe alluſion by reaſoning. In accumulating facts, as in amaſſing riches, people often begin by believing that they value wealth only for the uſe they ſhall make of it; but it often happens, that during the courſe of their labours they learn habitually to ſet a value upon the coin itſelf, and they grow avaricious of that which they are ſenſible has little intrinſic value. Young people who have accumulated a vaſt number of facts, and names, and dates, perhaps intended originally to make ſome good uſe of their treaſure; but they frequently forget

their laudable intentions, and conclude by contenting themſelves with the diſplay of their nominal wealth. Pedants and miſers forget the real uſe of wealth and knowledge, and they accumulate without rendering what they acquire uſeful to themſelves or to others.

A number of facts are often ſtored in the mind, which lie there uſeleſs, becauſe they cannot be found at the moment when they are wanted. It is not ſufficient in education to ſtore up knowledge, it is eſſential to arrange facts ſo that they ſhall be ready for uſe, as materials for the imagination, or the judgment, to ſelect and combine. The power of retentive memory is exerciſed too much, the faculty of recollective memory is exerciſed too little, by the common modes of education. Whilſt children are reading the hiſtory of kings, and battles, and victories, whilſt they are learning tables of chronology and leſſons of geography by rote, their inventive and their reaſoning faculties are abſolutely paſſive; nor are any of the facts which they learn in this manner aſſociated with circumſtances in real life. Theſe trains of ideas

may with much pains and labour be fixed in the memory, but they muſt be recalled preciſely in the order in which they were learnt by rote, and this is not the order in which they may be wanted: they will be conjured up in technical ſucceſſion, or in troubleſome multitudes. Many people are obliged to repeat the alphabet before they can recollect the relative place of any given letter; others repeat a column of the multiplication table before they can recollect the ſum of the numbers which they want. There is a common rigmarole for telling the number of days in each month in the year; thoſe who have learned it by heart uſually repeat the whole of it before they can recollect the place of the month which they want; and ſometimes in running over the lines people miſs the very month which they are thinking of, or repeat its name without perceiving that they have named it. In the ſame manner, thoſe who have learned hiſtorical or chronological facts in a technical mode, muſt go through the whole train of their rigmarole aſſociations before they can hit upon the idea which they want.

Lord Bolingbroke mentions an acquaintance of his, who had an amazing collection of facts in his memory, but unfortunately he could never produce one of them in the proper moment; he was always obliged to go back to some fixed landing place from which he was accustomed to take his flight. Lord Bolingbroke used to be afraid of asking him a question, because when once he began, he went off like a larum, and could not be stopped; he poured out a profusion of things which had nothing to do with the point in question; and it was ten to one but he omitted the only circumstance that would have been really serviceable. Many people who have tenacious memories, and who have been ill educated, find themselves in a similar condition, with much knowledge baled up, an incumbrance to themselves and to their friends. The great difference which appears in men of the same profession, and in the same circumstances, depends upon the application of their knowledge more than upon the quantity of their learning.

With respect to a knowledge of history and

chronologic learning, every body is now nearly upon a level; this ſpecies of information cannot be a great diſtinction to any one: a diſplay of ſuch common knowledge is conſidered by literary people, and by men of genius eſpecially, as ridiculous and offenſive. One motive, therefore, for loading the minds of children with hiſtoric dates and facts, is likely, even from its having univerſally operated, to ceaſe to operate in future. Without making it a laborious taſk to young people, it is eaſy to give them ſuch a knowledge of hiſtory as will preſerve them from the ſhame of ignorance, and put them upon a footing with men of good ſenſe in ſociety, though not perhaps with men who have ſtudied hiſtory for the purpoſe of ſhining in converſation. For our purpoſe, it is not neceſſary early to ſtudy voluminous philoſophic hiſtories; theſe ſhould be preſerved for a more advanced period of their education. The firſt thing to be done, is to ſeize the moment when curioſity is excited by the accidental mention of any hiſtoric name or event. When a child hears his father talk of the Roman emperors, or of the Roman people, he naturally inquires

who theſe people were; ſome ſhort explanation may be given, ſo as to leave curioſity yet unſatisfied. The prints of the Roman emperors heads, and Mrs. Trimmer's prints of the remarkable events in the Roman and Engliſh hiſtory, will entertain children. Madame de Silleri, in her Adela and Theodore, deſcribes hiſtorical hangings, which ſhe found advantageous to her pupils. In a prince's, or a nobleman's palace, ſuch hangings would be ſuitable decorations, or in a public ſeminary of education it would be worth while to prepare them; private families would perhaps be alarmed at the idea of expence, and at the idea, that their houſe could not readily be furniſhed in proper time for the inſtruction of children. As we know the effect of ſuch apprehenſions of difficulty, we forbear from inſiſting upon hiſtorical hangings, eſpecially as we think that children ſhould not, by any great apparatus for teaching them hiſtory, be induced to ſet an exorbitant value upon this ſort of knowledge, and ſhould hence be excited to cultivate their memories without reaſoning or reflecting. If any expedients are

thought neceſſary to fix hiſtoric facts early in the mind, the entertaining diſplay of Roman Emperors, and Britiſh Kings and Queens, may be made, as Madame de Silleri recommends, in a magic lanthorn, or by the Ombres Chinoiſes. When theſe are exhibited, there ſhould be ſome care taken not to introduce any falſe ideas. Parents ſhould be preſent at the ſpectacle, and ſhould anſwer each eager queſtion with prudence. "Ha! here comes queen Eli-"zabeth!" exclaims the child; "was ſhe a "good woman?" A fooliſh ſhow-man would anſwer, "Yes, maſter, ſhe was the greateſt "queen that ever ſat upon the Engliſh throne!" A ſenſible mother would reply, "My dear, I "cannot anſwer that queſtion; you will read "her hiſtory yourſelf; you will judge by her "actions whether ſhe was, or was not, a good "woman." Children are often extremely impatient to ſettle the preciſe merit and demerit of every hiſtorical perſonage, with whoſe names they become acquainted; but this impatience ſhould not be gratified by the ſhort method of referring to the characters given of theſe per-

ſons in any common hiſtorical abridgment. We ſhould adviſe all ſuch characters to be omitted in books for children; let thoſe who read form a judgment for themſelves: this will do more ſervice to the underſtanding, than can be done by learning by rote the opinion of any hiſtorian. The good and bad qualities; the deciſive, yet contradictory epithets, are ſo jumbled together in theſe characters, that no diſtinct notion can be left in the reader's mind; and the ſame words recur ſo frequently in the characters of different kings, that they are read over in a monotonous voice, as mere concluding ſentences, which come, of courſe, at the end of every reign. "King Henry the Fifth was tall and "ſlender, with a long neck, engaging aſpect, "and limbs of the moſt elegant turn. * * * "* * * * * * His valour was ſuch as no "danger could ſtartle, and no difficulty could "oppoſe. He managed the diſſenſions amongſt "his enemies with ſuch addreſs as ſpoke him "conſummate in the arts of the cabinet. He "was chaſte, temperate, modeſt, and devout, "ſcrupulouſly juſt in his adminiſtration, and

" ſeverely exact in the diſcipline of his army,
" upon which he knew his glory and ſucceſs
" in a great meaſure depended. In a word,
" it muſt be owned that he was without an
" equal in the arts of war, policy, and govern-
" ment. His great qualities were, however,
" ſomewhat obſcured by his ambition, and his
" natural propenſity to cruelty."

Is it poſſible that a child of ſeven or eight years old can acquire any diſtinct, or any juſt ideas, from the peruſal of this character of Henry the Fifth? yet it is ſelected as one of the beſt drawn characters from a little abridgment of the hiſtory of England, which is, in general, as well done as any we have ſeen. Even the leaſt exceptionable hiſtoric abridgments require the corrections of a patient parent. In abridgments for children the facts are uſually interſperſed with what the authors intend for moral reflections, and eaſy explanations of political events, which are meant to be ſuited to *the meaneſt capacities*. Theſe reflections and explanations do much harm; they inſtil prejudice, and they accuſtom the young unſuſpicious

reader to ſwallow abſurd reaſoning, merely becauſe it is often preſented to them. If no hiſtory can be found entirely free from theſe defects, and if it be even impoſſible to correct any completely, without writing the whole over again, yet much may be done by thoſe who hear children read. Explanations can be given at the moment when the difficulties occur. When the young reader pauſes to think, allow him time to think, and ſuffer him to queſtion the aſſertions which he meets with in books with freedom, and that minute accuracy which is only tireſome to thoſe who cannot reaſon. The ſimple morality of childhood is continually puzzled and ſhocked at the repreſentation of the crimes and the virtues of hiſtoric heroes. Hiſtory, when diveſted of the graces of eloquence, and of that veil which the imagination is taught to throw over antiquity, preſents a diſguſting, terrible liſt of crimes and calamities; murders, aſſaſſinations, battles, revolutions, are the memorable events of hiſtory. The love of glory atones for military barbarity; treachery and fraud are frequently dignified with the

names of prudence and policy; and the hiſtorian, deſirous to appear moral and ſentimental, yet compelled to produce facts, makes out an inconſiſtent, ambiguous ſyſtem of morality. A judicious and honeſt preceptor will not, however, imitate the falſe tenderneſs of the hiſtorian for the dead, he will rather conſider what is moſt advantageous to the living; he will perceive, that it is of more conſequence that his pupils ſhould have diſtinct notions of right and wrong, than that they ſhould have perfectly by rote all the Grecian, Roman, Engliſh, French, all the fifty volumes of the Univerſal Hiſtory. A preceptor will not ſurely attempt, by any ſophiſtry, to juſtify the crimes which ſometimes obtain the name of heroiſm; when his ingenuous indignant pupil verifies the aſtoniſhing numeration of the hundreds and thouſands that were put to death by a conqueror, or that fell in one battle, he will allow this aſtoniſhment and indignation to be juſt, and he will rejoice that it is ſtrongly felt and expreſſed.

Beſides the falſe characters which are ſometimes drawn of individuals in hiſtory, national

characters are often decidedly given in a few epithets, which prejudice the mind, and convey no real information. Can a child learn any thing but national prepoſſeſſion from reading in a character of the Engliſh nation, that "boys, "before they can ſpeak, diſcover that they "know the proper guards in boxing with their "fiſts; a quality that, perhaps, is peculiar to "the Engliſh, and is ſeconded by a ſtrength of "arm that few other people can exert. *This* "gives their ſoldiers an infinite ſuperiority in "all battles that are to be decided by the bayo-"net ſcrewed upon the muſket*?" Why ſhould children be told that the Italians are *naturally* revengeful; the French *naturally* vain and perfidious, "exceſſively credulous and li-"tigious;" that the Spaniards are *naturally* jealous and haughty†? The patriotiſm of an enlarged and generous mind cannot, ſurely, depend upon the early contempt inſpired for foreign nations. We do not ſpeak of the educa-

* V. Guthrie's Geographical, Hiſtorical, and Commercial Grammar, p. 186.

† Ibid. p. 398.

tion neceſſary for naval and military men, with this we have nothing to do; but ſurely it cannot be neceſſary to teach national prejudices to any other claſs of young men. If theſe prejudices are ridiculed by ſenſible parents, children will not be miſled by partial authors; general aſſertions will be of little conſequence to thoſe who are taught to reaſon; they will not be overawed by nonſenſe wherever they may meet with it.

The words whig and tory occur frequently in Engliſh hiſtory, and liberty and tyranny are talked of—the influence of the crown—the rights of the people. What are children of eight or nine years old to underſtand by theſe expreſſions? and how can a tutor explain them, without inſpiring political prejudices? We do not mean here to enter into any political diſcuſſion; we think, that children ſhould not be taught the principles of their preceptors, whatever they may be; they ſhould judge for themſelves, and till they are able to judge, all diſcuſſion, all explanations, ſhould be ſcrupulouſly avoided. Whilſt they are children, the plaineſt

chronicles are for them the beſt hiſtories, becauſe they expreſs no political tenets and dogmas. When our pupils grow up, at whatever age they may be capable of underſtanding them, the beſt authors who have written on each ſide of the queſtion, the beſt works, without any party conſiderations, ſhould be put into their hands; and let them form their own opinions from facts and arguments, uninfluenced by paſſion, and uncontrolled by authority.

As young people increaſe their collection of hiſtoric facts, ſome arrangement will be neceſſary to preſerve theſe in proper order in the memory. Prieſtley's Biographical Chart is an ingenious contrivance for this purpoſe; it ſhould hang up in the room where children read, or rather where they live, for we hope no room will ever be diſmally conſecrated to their ſtudies. Whenever they hear any celebrated name mentioned, or when they meet with any in books, they will run to ſearch for theſe names in the biographical chart; and thoſe who are uſed to children will perceive, that the pleaſure of this ſearch, and the joy of the diſcovery,

will fix biography and chronology eaſily in their memories. Mortimer's Student's Dictionary, and Brookes's Gazetteer, ſhould, in a library or room which children uſually inhabit, be always within the reach of children. If they are conſulted at the very moment they are wanted, much may be learned from them; but if there be any difficulty in getting at theſe dictionaries, children forget, and loſe all intereſt in the things which they wanted to know. But if knowledge becomes immediately uſeful, or entertaining to them, there is no danger of their forgetting. Who ever forgets Shakſpeare's hiſtorical plays? The arrangements contrived and executed by others do not always fix things ſo firmly in our remembrance, as thoſe which we have had ſome ſhare in contriving and executing ourſelves.

One of our pupils has drawn out a biographical chart upon the plan of Prieſtley's, inſerting ſuch names only as he was well acquainted with; he found, that in drawing out this chart, a great portion of general hiſtory and biography was fixed in his memory. Charts,

in the form of Priestley's, but without the names of the heroes, &c. being inserted, would, perhaps, be useful for schools and private families.

There are two French historical works, which we wish were well translated for the advantage of those who do not understand French. The chevalier Meheghan's Tableau de l'Histoire Moderne, which is sensibly divided into epochs; and Condillac's View of Universal History, comprised in five volumes, in his "Cours d'Etude pour l'Instruction du Prince "de Parme." This history carries on, along with the records of wars and revolutions, the history of the progress of the human mind, of arts, and sciences; the view of the different governments of Europe is full, and concise; no prejudices are instilled, yet the manly and rational eloquence of virtue gives life and spirit to the work. The concluding address, from the preceptor to his royal pupil, is written with all the enlightened energy of a man of truth and genius. We do not recommend Condillac's history as an elementary work, for this it

is by no means fit; but it is one of the beſt hiſtories that a young man of fifteen or ſixteen can read. Millot, Elémens de l'Hiſtoire generale, ancienne, & moderne, is another uſeful work for young perſons.

We ſhould obſerve that M. Condillac's Metaphyſical Leſſons, which are inſerted in his Cours d'Etude, are not ſuited to the capacity of a child of ſeven years old. Without at preſent attempting to examine the Abbé's ſyſtem, we may remark, that in education it is more neceſſary to preſerve the mind from prejudice, than to prepare it for the adoption of any ſyſtem. Thoſe who have attended to metaphyſical proceedings know, that if a few apparently trifling conceſſions be made in the beginning of the buſineſs, a man of ingenuity may force us, in the end, to acknowledge whatever he pleaſes. It is impoſſible that a child can foreſee theſe conſequences, nor is it probable that he ſhould have paid ſuch accurate attention to the operations of his own mind, as to be able to detect the fallacy, or to feel the truth, of his tutor's aſſertions. A metaphyſical catechiſm may

readily be taught to children; they may learn to anſwer almoſt as readily as Trenck anſwered in his ſleep to the guards who regularly called to him every night at midnight. Children may anſwer expertly to the queſtions, "What is attention? What is memory? What is imagination? What is the difference between wit and judgment? How many ſorts of ideas have you, and which be they?" But when they are perfect in their reſponſes to all theſe queſtions, how much are they advanced in real knowledge?

Allegory has mixed with metaphyſics almoſt as much as with poetry; perſonifications of memory and imagination are familiar to us; to each have been addreſſed odes and ſonnets, ſo that we almoſt believe in their individual exiſtence, or at leaſt we are become jealous of the ſeparate attributes of theſe ideal beings. This metaphyſical mythology may be ingenious and elegant, but it is better adapted to the pleaſures of poetry than to the purpoſes of reaſoning. Thoſe who have been accuſtomed to reſpect and believe in it, will find it difficult, ſoberly to

examine any argument upon abſtract ſubjects; their favourite prejudices will retard them when they attempt to advance in the art of reaſoning. All accurate metaphyſical reaſoners have perceived, and deplored, the difficulties which the prepoſſeſſions of education have thrown in their way; and they have been obliged to waſte their time and powers in fruitleſs attempts to vanquiſh theſe in their own minds, or in thoſe of their readers. Can we wiſh in education to perpetuate ſimilar errors, and to tranſmit to another generation the ſame artificial imbecility? Or can we avoid theſe evils, if with our preſent habits of thinking and ſpeaking we attempt to teach metaphyſics to children of ſeven years old?

A well educated, intelligent young man, accuſtomed to accurate reaſoning, yet brought up without any metaphyſical prejudices, would be a treaſure to a metaphyſician to croſs examine: he would be eager to hear the unprejudiced youth's evidence, as the monarch, who had ordered a child to be ſhut up, without hearing one word of any human language, from infancy

to manhood, was impatient to hear what would be the firſt word that he uttered. But though we wiſh extremely well to the experiments of metaphyſicians, we are more intent upon the advantage which our unprejudiced pupils would themſelves derive from their judicious education: probably they would, coming freſh to the ſubject, make ſome diſcoveries in the ſcience of metaphyſics: they would have no paces * to ſhew, perhaps they might advance a ſtep or two on this difficult ground.

When we object to the early initiation of novices into metaphyſical myſteries, we only recommend it to preceptors not to teach; let pupils learn whatever they pleaſe, or whatever they can, without reading any metaphyſical books, and without hearing any opinions, or learning any definitions by rote; children may reflect upon their own feelings, and they ſhould be encouraged to make accurate obſervations upon their own minds. Senſible children will ſoon, for inſtance, obſerve the effect of habit,

* V. Dunciad.

which enables them to repeat actions with eaſe and facility, which they have frequently performed. The aſſociation of ideas, as it aſſiſts them to remember particular things, will ſoon be noticed, though not, perhaps, in ſcientific words. The uſe of the aſſociation of pain or pleaſure, in the form of what we call reward and puniſhment, may probably be early perceived. Children will be delighted with theſe diſcoveries if they are ſuffered to make them, and they will apply this knowledge in their own education. Trifling daily events will recall their obſervations, and experience will confirm, or correct, their juvenile theories. But if metaphyſical books, or dogmas, are forced upon children in the form of leſſons, they will as ſuch be learned by rote and forgotten.

To prevent parents from expecting as much as the abbé Condillac does from the comprehenſion of pupils of ſix or ſeven years old upon abſtract ſubjects, and to enable preceptors to form ſome idea of the perfect ſimplicity in which children unprejudiced upon metapyſical queſtions would expreſs themſelves, we

give the following little dialogues, word for word, as they paſſed.

1780. *Father.* Where do you think?

A——. (Six years and a half old.) In my mouth.

Ho——. (Five years and a half old.) In my ſtomach.

Father. Where do you feel that you are glad, or ſorry?

A——. In my ſtomach.

Ho——. In my eyes.

Father. What are your ſenſes for?

Ho——. To know things.

Without any previous converſation, Ho—— (five years and a half old) ſaid to her mother, "I think you will be glad my right foot is "ſore, becauſe you told me I did not lean "enough upon my left foot." This child ſeemed, on many occaſions, to have formed an accurate idea of the uſe of puniſhment, conſidering it always as pain given to cure us of ſome fault, or to prevent us from ſuffering more pain in future.

April, 1792. H——, a boy nine years and

three quarters old, as he was hammering at a work-bench, paused for a short time, and then said to his sister, who was in the room with him, "Sister, I observe that when I don't look "at my right hand when I hammer, and only "think where it ought to hit, I can hammer "much better than when I look at it. I don't "know what the reason of that is; unless it is "because I think in my head."

M——. I am not sure, but I believe that we do think in our heads.

H——. Then perhaps my head is divided into two parts, and that one thinks for one arm, and one for the other; so that when I want to strike with my right arm, I think where I want to hit the wood, and then, without looking at it, I can move my arm in the right direction; as when my father is going to write, he sometimes sketches it.

M——. What do you mean, my dear, by sketching it?

H——. Why, when he moves his hand (flourishes) without touching the paper with the pen. And at first, when I want to do any

thing, I cannot move my hand as I mean; but after being uſed to it, then I can do much better. I don't know why.

After going on hammering for ſome time, he ſtopped again, and ſaid, "There's another "thing I wanted to tell you. Sometimes I "think to myſelf that it is right to think of "things that are ſenſible, and then when I "want to ſet about thinking of things that "are ſenſible, I can *not*, I can only think of "that over and over again."

M——. You can only think of what?

H——. Of theſe words. They ſeem to be ſaid to me over and over again, till I'm quite tired, "That it is right to think of things that "have ſome ſenſe."

The childiſh expreſſions in theſe remarks have not been altered, becauſe we wiſhed to ſhew exactly how children at this age expreſs their thoughts. If M. Condillac had been uſed to converſe with children, he ſurely would not have expected, that any boy of ſeven years old could have underſtood his definition of

attention, and his metaphyſical preliminary leſſons.

After theſe preliminary leſſons, we have a ſketch of the prince of Parma's ſubſequent ſtudies. M. Condillac ſays, that his royal highneſs (being not yet eight years old) was now "perfectly well acquainted with the ſyſtem "of intellectual operations. He comprehend- "ed already the production of his ideas; he "ſaw the origin and the progreſs of the ha- "bits which he had contracted, and he per- "ceived how he could ſubſtitute juſt ideas for "the falſe ones which had been given to "him, and good habits inſtead of the bad "habits which he had been ſuffered to acquire. "He had become ſo quickly familiar with all "theſe things, that he retraced their connex- "ion without effort, quite playfully*."

* Motif des études qui ont été faites aprés les Leçons Préliminaires, p. 67,

Le jeune prince connoiſſoit déja le ſyſtême des opérations de ſon ame, il comprenoit la génération de ſes idées, il voyoit l'origine et le progrès des habitudes qu'il avoit contractées, et il concevoit comment il pouvoit ſubſtituer des idées juſtes aux idées fauſſes qu'on lui avoit données,

This prince muſt have been a prodogy! After having made him reflect upon his own infancy, the abbé judged that the infancy of the world would appear to his pupil "the "moſt curious ſubject, and the moſt eaſy to "ſtudy." The analogy between theſe two infancies ſeems to exiſt chiefly in words; it is not eaſy to gratify a child's curioſity concerning the infancy of the world. Extracts from L'Origine des Loix, by M. Goguet, with explanatory notes, were put into the prince's hands, to inform him of what happened in the commencement of ſociety. Theſe were his evening ſtudies. In the mornings he read the French poets, Boileau, Moliere, Corneille, and Racine. Racine, as we are particularly informed, was in the ſpace of one year, read over a dozen times. Wretched prince! Unfortunate Racine! the abbé acknowledges, that at firſt theſe authors

et de bonnes habitudes aux mauvaiſes qu'on lui avoit laiſſé prendre. Il s'étoit familiariſé ſi promptement avec toutes ces choſes, qu'il s'en retraçoit la ſuite ſans effort, et comme en badinant.

were not underſtood with the ſame eaſe as the preliminary leſſons had been: every word ſtopped the prince, and it ſeemed as if every line were written in an unknown language. This is not ſurpriſing, for how is it poſſible that a boy of ſeven or eight years old, who could know nothing of life and manners, could taſte the wit and humour of Moliere; and, incapable as he muſt have been of ſympathy with the violent paſſions of tragic heroes and heroines, how could he admire the lofty dramas of Racine? We are willing to ſuppoſe, that the young prince of Parma was quick and well-informed for his age, but to judge of what is practicable we muſt produce examples from common life, inſtead of prodigies.

S——, a boy of nine years old, of whoſe abilities the reader will be able to form ſome judgment from anecdotes in the following pages, whoſe underſtanding was not wholly uncultivated, when he was between nine and ten years old expreſſed a wiſh to read ſome of Shakſpeare's plays. King John was given to him. After the book had been before him for one

winter's evening, he returned it to his father, declaring that he did not underſtand one word of the play, he could not make out what the people were about, and he did not wiſh to read any more of it. His brother H——, at twelve years old, had made an equally ineffectual attempt to read Shakſpeare: he was alſo equally decided and honeſt in expreſſing his diſlike to it; he was much ſurpriſed at ſeeing his ſiſter B——, who was a year or two older than himſelf, reading Shakeſpeare with great avidity, and he frequently aſked what it was in that book that could entertain her. Two years afterwards, when H—— was between fourteen and fifteen, he made another trial, and he found that he underſtood the language of Shakſpeare without any difficulty. He read all the hiſtorical plays with the greateſt eagerneſs, and particularly ſeized the character of Falſtaff. He gave a humorous deſcription of the figure and dreſs which he ſuppoſed Sir John ſhould have, of his manner of ſitting, ſpeaking, and walking. Probably, if H—— had been preſſed to read Shakſpeare at the time when he

did not underſtand it, he might never have read theſe plays with real pleaſure during his whole life. Two years increaſe prodigiouſly the vocabulary and the ideas of young people, and preceptors ſhould conſider, that what we call literary taſte cannot be formed without a variety of knowledge. The productions of our ableſt writers cannot pleaſe, till we are familiariſed to the ideas which they contain, or to which they allude.

Poetry is uſually ſuppoſed to be well ſuited to the taſte and capacity of children. In the infancy of taſte and of eloquence rhetorical language is conſtantly admired; the bold expreſſion of ſtrong feeling, and the ſimple deſcription of the beauties of nature, are found to intereſt both cultivated and uncultivated minds. To underſtand deſcriptive poetry no previous knowledge is required, beyond what common obſervation and ſympathy ſupply; the analogies and tranſitions of thought are ſlight and obvious; no labour of attention is demanded, no active effort of the mind is requiſite to follow them. The pleaſures of ſimple ſenſation are by deſcriptive poe-

try recalled to the imagination, and we live over again our paſt lives without increaſing, and without deſiring to increaſe, our ſtock of knowledge. If theſe obſervations be juſt, there muſt appear many reaſons, why even that ſpecies of poetry, which they can underſtand, ſhould not be the early ſtudy of children; from time to time it may be an agreeable amuſement, but it ſhould not become a part of their daily occupations. We do not want to retrace perpetually in their memories a few muſical words, or a few ſimple ſenſations; our object is to enlarge the ſphere of our pupil's capacity, to ſtrengthen the habits of attention, and to exerciſe all the powers of the mind. The inventive and the reaſoning faculties muſt be injured by the repetition of vague expreſſions, and of exaggerated deſcription, with which moſt poetry abounds. Childhood is the ſeaſon for obſervation, and thoſe who obſerve accurately will afterwards be able to deſcribe accurately: but thoſe, who merely read deſcriptions, can preſent us with nothing but the pictures of pictures. We have reaſon to believe that children,

who have not been accuſtomed to read a vaſt deal of poetry, are not for that reaſon leſs likely to excel in poetic language. The reader will judge from the following explanations of Gray's Hymn to Adverſity, that the boy to whom they were addreſſed was not much accuſtomed to read even the moſt popular Engliſh poetry; yet this is the ſame child, who a few months afterwards wrote the tranſlation from Ovid of the Cave of Sleep, and who gave the extempore deſcription of a ſummer's evening in tolerably good language.

Jan. 1796. S—— (nine years old) learned by heart the Hymn to Adverſity. When he came to repeat this poem, he did not repeat it well, and he had it not perfectly by heart. His father ſuſpected that he did not underſtand it, and he examined him with ſome care.

Father. "Purple tyrants." Why purple?

S——. Becauſe purple is a colour ſomething like red and black; and tyrants look red and black.

Father. No. Kings were formerly called tyrants, and they wore purple robes: the purple

of the ancients is ſuppoſed to be not the colour which we call purple, but that which we call ſcarlet.

" When firſt thy fire to ſend on earth
" Virtue, his darling child, deſign'd,
" To thee he gave the heavenly birth,
" And bade to form her infant mind."

When S—— was aſked who was meant in theſe lines by " thy fire," he frowned terribly; but after ſome deliberation he diſcovered that " thy fire" meant Jove, the father, or fire of Adverſity: ſtill he was extremely puzzled with " the heavenly birth." Firſt he thought, that the heavenly birth was the birth of Adverſity; but upon recollection the heavenly birth was to be truſted to Adverſity, therefore ſhe could not be truſted with the care of herſelf. S—— at length diſcovered, that Jove muſt have had two daughters, and he ſaid he ſuppoſed that Virtue muſt have been one of theſe daughters, and that ſhe muſt have been ſiſter to Adverſity, who was to be her nurſe, and who was to form her infant mind: he now perceived that the expreſſion, " Stern, rugged nurſe," referred to Adverſity; before this he ſaid, he did not know

who it meant, whoſe "rigid lore" was alluded to in theſe two lines, or who bore it with patience.

"Stern, rugged nurſe, thy rigid lore
"With patience many a year ſhe bore."

The following ſtanza S—— repeated a ſecond time, as if he did not underſtand it.

"Scared at thy frown, terrific fly
"Self pleaſing follies, idle brood,
"Wild laughter, noiſe, and thoughtleſs joy,
"And leave us leiſure to be good.
"Light they diſperſe, and with them go
"The ſummer friend, the flattering foe;
"By vain proſperity receiv'd,
"To her they vow their truth, and are again be-
"liev'd."

Father. Why does the poet ſay *wild* laughter?

S——. It means, not reaſonable.

Father. Why is it ſaid,

"By vain proſperity receiv'd,
"To her they vow their truth, and are again be-
"liev'd?"

S——. Becauſe the people, I ſuppoſe, when they were in proſperity before, believed them before, but I think that ſeems confuſed.

" Oh gently on thy ſuppliant's head,
" Dread goddeſs, lay thy chaſtening hand."

S—— did not ſeem to comprehend the firſt of theſe two lines; and upon croſs examination it appeared that he did not know the meaning of the word *ſuppliant*, he thought it meant " a per-
" ſon who ſupplies us."

" Not in thy Gorgon terrors clad,
" Nor circled by the vengeful band,
" As by the impious thou art ſeen."

It may appear improbable, that a child who did not know the meaning of the word ſuppliant, ſhould underſtand the Gorgon terrors, and the vengeful band, yet it was ſo; S—— underſtood theſe lines diſtinctly, he ſaid, " Gorgon
" terrors, yes, like the head of Gorgon." He was at this time tranſlating from Ovid's Metamorphoſes; and it happened that his father had explained to him the ideas of the ancients concerning the furies; beſides this, ſeveral people in the family had been reading Potter's Æſchylus, and the furies had been the ſubject of converſation. From ſuch accidental circumſtances as theſe, children often appear in the ſame in-

ſtant almoſt, to be extremely quick, and extremely ſlow of comprehenſion; a preceptor who is well acquainted with all his pupil's previous knowledge, can rapidly increaſe his ſtock of ideas by turning every accidental circumſtance to account: but if a tutor perſiſts in forcing a child to a regular courſe of ſtudy, all his ideas muſt be collected, not as they are wanted in converſation or in real life, but as they are wanted to get through a leſſon or a book. It is not ſurpriſing, that M. Condillac found ſuch long explanations neceſſary for his young pupil in reading the tragedies of Racine; he ſays, that he was frequently obliged to tranſlate the poetry into proſe, and frequently the prince could gather only ſome general idea of the whole drama, without underſtanding the parts. We cannot help regretting, that the explanations have not been publiſhed for the advantage of future preceptors, they muſt have been almoſt as difficult as thoſe for the preliminary leſſons. As we are convinced that the art of education can be beſt improved by the regiſtering of early experiments, we are very

willing to expoſe ſuch as have been made without fear of faſtidious criticiſm or ridicule.

May 1ſt, 1796. A little poem called "The "Tears of Old May-day," publiſhed in the ſecond volume of the World, was read to S——. The preceding May-day the ſame poem had been read to him; he then liked it much, and his father wiſhed to ſee what effect it would have upon this ſecond reading. The pleaſure of novelty was worn off, but S—— felt new pleaſure from his having during the laſt year acquired a great number of new ideas, and eſpecially ſome knowledge of ancient mythology, which enabled him to underſtand ſeveral alluſions in the poem which had before been unintelligible to him. He had become acquainted with the muſes, the graces, Cynthia, Philomel, Aſtrea, who are all mentioned in this poem; he now knew ſomething about the Heſperian fruit, Amalthea's horn, choral dances, Libyan Ammon, &c. which are alſo alluded to; he remembered the explanation which his father had given him the preceding year of a line which alludes to the iſland of Atalantis.

" Then vaniſhed many a ſea-girt iſle and grove,
" Their foreſts floating on the wat'ry plain;
" Then famed for arts, and laws deriv'd from Jove,
" My Atalantis ſunk beneath the main.'

S——, whoſe imagination had been pleaſed with the idea of the fabulous iſland of Atalantis, recollected what he had heard of it; but he had forgotten the explanation of another ſtanza of this poem, which he had heard at the ſame time.

" To her no more Auguſta's wealthy pride,
" Pours the full tribute from Potoſi's mine;
" Nor freſh blown garlands village maids provide,
" A purer offering at her ruſtic ſhrine."

S—— forgot that he had been told that London was formerly called Auguſta? that Potoſi's mines contained ſilver; and that pouring the tribute from Potoſi's mines alludes to the cuſtom of hanging ſilver trankards upon the May-poles in London on May-day; conſequently the beauty of this ſtanza was entirely loſt upon him. A few circumſtances were now told to S—— which imprinted the explanation effectually in his memory: his father told him that the publicans, or thoſe who keep public houſes in Lon-

don, make it a cuſtom to lend their ſilver tankards to the poor chimney-ſweepers and milk-maids, who go in proceſſion through the ſtreets on May-day. The confidence that is put in the honeſty of theſe poor people pleaſed S——, and all theſe circumſtances fixed the principal idea more firmly in his mind.

The following lines could pleaſe him only by their ſound the firſt time he heard them.

" Ah! once to fame and bright dominion born,
" The earth and ſmiling ocean ſaw me riſe,
" With time coeval, and the ſtar of morn,
" The firſt, the faireſt daughter of the ſkies.

" Then, when at heaven's prolific mandate ſprung
" The radiant beam of new created day,
" Celeſtial harps, to airs of triumph ſtrung,
" Hail'd the glad dawn, and angels called me May.

" Space in her empty regions heard the ſound,
" And hills and dales, and rocks and vallies rung;
" The ſun exulted in his glories round,
" And ſhouting planets in their courſes ſung."

The idea which the ancients had of the muſic of the ſpheres was here explained to S——, and ſome general notion was given to him of the *harmonic numbers*.

What a number of new ideas this little poem ſerved to introduce into the mind! Theſe explanations being given preciſely at the time when they were wanted, fixed the ideas in the memory in their proper places, and aſſociated knowledge with the pleaſures of poetry. Some of the effect of a poem muſt, it is true, be loſt by interruptions and explanations; but we muſt conſider the general improvement of the underſtanding, and not merely the cultivation of poetic taſte. In the inſtance which we have juſt given, the pleaſure which the boy received from the poem ſeemed to increaſe in proportion to the exactneſs with which it was explained. The ſucceeding year, on May-day 1797, the ſame poem was read to him for the third time, and he appeared to like it better than he had done upon the firſt reading. If, inſtead of peruſing Racine twelve times in one year, the young prince of Parma had read any one play or ſcene at different periods of his education, and had been led to obſerve the increaſe of pleaſure which he felt from being able to underſtand what he read better each ſucceeding time, he would probably have improved more rapidly

in his taſte for poetry, though he might not have known Racine by rote quite ſo early as at eight years old.

We conſidered parents almoſt as much as children, when we adviſed that a great deal of poetry ſhould not be read by very young pupils; the labour and difficulty of explaining it can be known only to thoſe who have tried the experiment. The Elegy in a country church-yard is one of the moſt popular poems, which is uſually given to children to learn by heart; it coſt at leaſt a quarter of an hour to explain to intelligent children, the youngeſt of whom was at the time nine years old, the firſt ſtanza of that elegy. And we have heard it aſſerted by a gentleman not unacquainted with literature, that perfectly to underſtand l'Allegro and Il Penſeroſo, requires no inconſiderable portion of of ancient and modern knowledge. It employed ſeveral hours on different days to read and explain Comus, ſo as to make it intelligible to a boy of ten years, who gave his utmoſt attention to it. The explanations on this poem were found to be ſo numerous and intricate,

that we thought it beſt not to produce them here. Explanations which are given by a reader can be given with greater rapidity and effect, than any which a writer can give to children: the expreſſion of the countenance is advantageous, the ſprightlineſs of converſation keeps the pupils awake, and the connexion of the parts of the ſubject can be carried on better in ſpeaking and reading, than it can be in written explanations. Notes are almoſt always too formal, or too obſcure; they explain what was underſtood more plainly before any illuſtration was attempted, or they leave us in the dark the moment we want to be enlightened. Wherever parents or preceptors can ſupply the place of notes, and commentators, they need not think their time ill beſtowed. If they cannot undertake theſe troubleſome explanations, they can ſurely reſerve obſcure poems for a later period of their pupils education. Children, who are taught at ſeven or eight years old to repeat poetry, frequently get beautiful lines by rote, and ſpeak them fluently, without in the leaſt underſtanding the meaning

of the lines. The buſineſs of a poet is to pleaſe the imagination, and to move the paſſions: in proportion as his language is ſublime or pathetic, witty or ſatirical, it muſt be unfit for children. Knowledge cannot be detailed, or accurately explained in poetry; the beauty of an alluſion depends frequently upon the elliptical mode of expreſſion, which paſſing imperceptibly over all the intermediate links in our aſſociations, is apparent only when it touches the ends of the chain. Thoſe who wiſh to inſtruct muſt purſue the oppoſite ſyſtem.

In Doctor Wilkins's eſſay on Univerſal Language, he propoſes to introduce a note ſimilar to the common note of admiration, to give the reader notice when any expreſſion is uſed in an ironical or in a metaphoric ſenſe. Such a note would be of great advantage to children: in reading poetry they are continually puzzled between the obvious and the metaphoric ſenſe of the words*. The deſire to make children

* In Dr. Franklin's poſthumous Eſſays there is an excellent remark with reſpect to typography as connected with the art of reading. The note of interrogation ſhould

learn a vaſt deal of poetry by heart, fortunately for the underſtanding of the riſing generation, does not rage with ſuch violence as formerly. Dr. Johnſon ſucceſsfully laughed at infants liſping out, "Angels and miniſters of grace, "defend us." His reproof was rather ill-natured, when he begged two children who were produced, to repeat ſome lines to him, "Can't the pretty dears repeat them both to-"gether?" But this reproof has probably prevented many exhibitions of the ſame kind.

Some people learn poetry by heart for the pleaſure of quoting it in converſation; but the talent for quotation, both in converſation and in writing, is now become ſo common, that it cannot confer immortality *. Every perſon has by rote certain paſſages from Shakſpeare and Thomſon, Goldſmith and Gray; theſe trite quotations fatigue the literary ear, and diſguſt the taſte of the public. To this change in the faſhion of the day, thoſe who are much in-

be placed at the beginning as well as at the end of a queſtion; it is ſometimes ſo far diſtant as to be out of the reach of an unpractiſed eye.

* Young.

fluenced by faſhion will probably liſten with more eagerneſs than to all the reaſons that have been offered. But to return to the prince of Parma. After reading Corneille, Racine, Moliere, Boileau, &c. the young prince's taſte was formed, as we are aſſured by his preceptor, and he was now fit for the ſtudy of grammar. So much is due to the benevolent intentions of a man of learning and genius, who ſubmits to the drudgery of writing an elementary book on grammar, that even a critic muſt feel unwilling to examine it with ſeverity. M. Condillac, in his attempt to write a rational grammar, has produced, if not a grammar fit for children, a philoſophical treatiſe, which a well educated young perſon will read with great advantage at the age of ſeventeen or eighteen. All that is ſaid of the natural language of ſigns, of the language of action, of pantomimes, and of the inſtitution of M. l'Abbé l'Epée for teaching languages to the deaf and dumb, is not only amuſing and inſtructive to general readers, but with ſlight alterations in the language might be perfectly adapted to the

capacity of children. But when the Abbé Condillac goes on to "Your Highneſs knows "what is meant by a ſyſtem," he immediately forgets his pupil's age. The reader's attention is preſently engaged by an abſtract diſquiſition on the relative proportion, repreſented by various circles of different extent, of the wants, ideas, and language of ſavages, ſhepherds, commercial and poliſhed nations, when he is ſuddenly wakened to the recollection, that all this is addreſſed to a child of eight years old; an alluſion to the prince's little chair completely rouſes us from our reverie.

"As your little chair is made in the ſame "form as mine, which is higher, ſo the ſyſtem "of ideas is fundamentally the ſame amongſt "ſavage and civiliſed nations; it differs only in "degrees of extenſion, as after one and the ſame "model ſeats of different heights have been "made*."

* Comme votre petite chaiſe eſt faite ſur le même modèle que la mienne qui eſt plus élevée, ainſi le ſyſtème des idées eſt le même pour le fond chez les peuples ſauvages et chez les peuples civiliſés, il ne differe, que parce qu'il eſt plus ou moins étendu; c'eſt un même modèle d'après lequel on a fait des ſieges de différente hauteur.

Grammaire, page 23.

Such miſtakes as theſe in a work intended for a child are ſo obvious, that they could not have eſcaped the penetration of a great man, had he known as much of the practice as he did of the theory of the art of teaching.

To analyſe a thought, and to ſhew the conſtruction of language, M. Condillac*, in this volume on grammar, has choſen for an example a paſſage from an *éloge* on Peter Corneille, pronounced before the French academy by Racine, on the reception of Thomas Corneille, who ſucceeded to Peter. It is in the French ſtyle of academical panegyric, a repreſentation of the chaotic ſtate in which Corneille found the French theatre, and of the light and order which he diffuſed through the dramatic world by his creative genius. A ſubject leſs intereſting, or more unintelligible to a child, could ſcarcely have been ſelected. The lecture on the anatomy of Racine's thought laſts through fifteen pages; according to all the rules of art the diſſection is ably performed, but moſt children will turn from the operation with diſguſt.

* Condillac. Grammaire, p. 64.

The Abbé Condillac's treatiſe on the art of writing immediately ſucceeds to his grammar: the examples in this volume are much better choſen: they are intereſting to all readers; thoſe eſpecially from Madame de Sevigné's letters, which are drawn from familiar language and domeſtic life. The enumeration of the figures of ſpeech and the claſſification of the flowers of rhetoric are judiciouſly ſuppreſſed; the catalogue of the different ſorts of *turns*, phraſes proper for maxims and principles, turns proper for ſentiment, ingenious turns and quaint turns, ſtiff turns and eaſy turns, might perhaps have been ſomewhat abridged. The obſervations on the effect of unity in the whole deſign, and in all the ſubordinate parts of a work, though they may not be new, are ably ſtated; and the remark, that the utmoſt propriety of language, and the ſtrongeſt effect of eloquence and reaſoning, reſult from the greateſt poſſible attention to the connexion of our ideas, is impreſſed forcibly upon the reader throughout this work.

How far works of criticiſm in general are ſuited to children, remains to be conſidered.

Such works cannot probably ſuit their taſte, becauſe the taſte for ſyſtematic criticiſm cannot ariſe in the mind till many books have been read, till the various ſpecies of excellence ſuited to different ſorts of compoſition have been perceived, and till the mind has made ſome choice of its own. It is true, that works of criticiſm may teach children to talk well of what they read; they will be enabled to repeat what good judges have ſaid of books. But this is not, or ought not to be the object. After having been thus officiouſly aſſiſted by a connoiſſeur, who points out to them the beauties of authors, will they be able afterwards to diſcover beauties without his aſſiſtance? Or have they as much pleaſure in being told what to admire, what to praiſe, and what to blame, as if they had been ſuffered to feel and to expreſs their own feelings naturally? In reading an intereſting play, or beautiful poem, how often has a man of taſte and genius execrated the impertinent commentator, who interrupts him by obtruding his oſtentatious notes. "The "reader will obſerve the beauty of this thought."

"This is one of the fineſt paſſages in any au-
"thor ancient or modern." "The ſenſe of this
"line, which all former annotators have miſ-
"taken, is obviouſly reſtored by the addition of
"the vowel i." &c.

Deprived by theſe anticipating explanations of the uſe of his own common ſenſe, the reader deteſts the critic, ſoon learns to diſregard his references, and to ſkip over his learned truiſms. Similar ſenſations, tempered by duty or by fear, may have been ſometimes experienced by a vivacious child, who, eager to go on with what he is reading, is prevented from feeling the effect of the whole by a premature diſcuſſion of its parts. We hope that no keen hunter of paradoxes will here exult in having detected us in a contradiction; we are perfectly aware, that but a few pages ago we exhibited examples of detailed explanations of poetry for children; but theſe explanations were not of the criticiſing claſs, they were not deſigned to tell young people what to admire, but ſimply to aſſiſt them to underſtand before they admired.

Works of criticiſm are ſometimes given to

pupils, with the idea that they will inſtruct and form them in the art of writing; but few things can be more terrific or dangerous to the young writer, than the voice of relentleſs criticiſm. Hope ſtimulates, but fear depreſſes the active powers of the mind; and how much have they to fear, who have continually before their eyes the miſtakes and diſgrace of others; of others, who with ſuperior talents have attempted and failed! With a multitude of precepts and rules of rhetoric full in their memory, they cannot expreſs the ſimpleſt of their thoughts; and to write a ſentence compoſed of members, which have each of them names of many ſyllables, muſt appear a moſt formidable and preſumptuous undertaking. On the contrary, a child who, in books and in converſation, has been uſed to hear and to ſpeak correct language, and who has never been terrified with the idea, that to write, is to expreſs his thoughts in ſome new and extraordinary manner, will naturally write as he ſpeaks, and as he thinks. Making certain characters upon paper to repreſent to others

what he wiſhes to ſay * to them, will not appear to him a matter of dread and danger, but of convenience and amuſement, and he will write proſe without knowing it.

Amongſt ſome "practical eſſays†," lately publiſhed, "to aſſiſt the exertions of youth in "their literary purſuits," there is an eſſay on letter writing, which might deter a timid child from ever undertaking ſuch an arduous taſk as that of writing a letter. So much is ſaid from Blair, from Cicero, from Quintilian; ſo many things are requiſite in a letter; purity, neatneſs, ſimplicity; ſuch caution muſt be uſed to avoid "exotics tranſplanted from foreign languages, "or raiſed in the hot-beds of affectation and "conceit;" ſuch attention to the mother tongue is preſcribed; that the young nerves of the letter writer muſt tremble when he takes up his pen. Beſides, he is told that "he ſhould be "extremely reſerved on the head of pleaſantry," and that "as to ſallies of wit, it is ſtill more "dangerous to let them fly at random; but "he may repeat the ſmart ſayings of others if

* Rouſſeau. † Milne's Well-bred Scholar.

" he will, or relate *part* of ſome droll adven-
" ture to enliven his letter."

The anxiety that parents and tutors frequently expreſs, to have their children write letters, and good letters, often prevents the pupils from writing during the whole courſe of their lives. Letter writing becomes a taſk, and an evil to children; whether they have any thing to ſay or not, write they muſt, this poſt or next, without fail, *a pretty letter* to ſome relation or friend, who has exacted from them the awful promiſe of punctual correſpondence. It is no wonder that ſchool boys and ſchool girls, in theſe circumſtances, feel that neceſſity is *not* the mother of invention; they are reduced to the humiliating miſery of begging from ſome old practitioner a beginning, or an ending, and ſomething to ſay to fill up the middle.

Locke humorouſly deſcribes the miſery of a ſchool-boy who is to write a theme, and having nothing to ſay, goes about with the uſual petition in theſe caſes to his companions: " Pray " give me a little ſenſe." Would it not be better to wait till children have ſenſe, before

we exact from them themes and diſcourſes upon literary ſubjects? There is no danger, that thoſe who acquire a variety of knowledge and numerous ideas ſhould not be able to find words to expreſs them; but thoſe who are compelled to find words before they have ideas are in a melancholy ſituation. To form a ſtyle is but a vague idea; practice in compoſition will certainly confer eaſe in writing upon thoſe, who write when their minds are full of ideas; but the practice of ſitting with a melancholy face, with pen in hand, waiting for inſpiration, will not much advance the pupil in the art of writing. We ſhould not recommend it to a preceptor to require regular themes at ſtated periods from his pupils; but whenever he perceives that a young man is ſtruck with any new ideas, or new circumſtances, when he is certain that his pupil has acquired a fund of knowledge, when he finds in converſation that words flow readily upon certain ſubjects, he may without danger upon theſe ſubjects excite his pupil to try his powers of writing. Theſe trials need not be frequently made; when a young man has once

acquired confidence in himſelf as a writer, he will certainly uſe his talent whenever proper occaſions preſent themſelves. The peruſal of the beſt authors in the Engliſh language will give him, if he adhere to theſe alone, ſufficient powers of expreſſion. The beſt authors in the Engliſh language are ſo well known, that it would be uſeleſs to enumerate them. Dr. Johnſon ſays, that whoever would acquire a pure Engliſh ſtyle, muſt give his days and nights to Addiſon. We do not, however, feel this excluſive preference for Addiſon's melodious periods; his page is ever elegant, but ſometimes it is too diffuſe. Hume, Blackſtone, and Smith, have a proper degree of ſtrength and energy combined with their elegance. Gibbon ſays, that the perfect compoſition and well-turned periods of Dr. Robertſon excited his hopes, that he might one day become his equal in writing; but "the calm philoſophy, the "careleſs inimitable beauties of his friend and "rival Hume, often forced me to cloſe the vo-"lume with a mixed ſenſation of delight and "deſpair." From this teſtimony we may judge,

that a ſimple ſtyle appears to the beſt judges to be more difficult to attain, and more deſirable, than that highly ornamented diction to which writers of inferior taſte aſpire. Gibbon tells us, with great candour, that his friend Hume adviſed him to beware of the rhetorical ſtyle of French eloquence. Hume obſerved that the Engliſh language, and Engliſh taſte, do not admit of this profuſion of ornament.

Without meaning to enter at large into the ſubject, we have offered theſe remarks upon ſtyle for the advantage of thoſe who are to direct the taſte of young readers; what they admire when they read, they will probably imitate when they write. We objected to works of criticiſm for young children, but we ſhould obſerve, that at a later period of education they will be found highly advantageous. It would be abſurd to mark the preciſe age at which Blair's Lectures, or Condillac's Art d'Ecrire, ought to be read, becauſe this ſhould be decided by circumſtances; by the progreſs of the pupils in literature, and by the ſubjects to which their attention happens to have turned. Of

theſe, preceptors and the pupils themſelves muſt be the moſt competent judges. From the ſame wiſh to avoid all pedantic attempts to dictate, we have not given any regular courſe of ſtudy in this chapter. Many able writers have laid down extenſive plans of ſtudy, and have named the books that are eſſential to the acquiſition of different branches of knowledge. Amongſt others we may refer to Dr. Prieſtley's, which is to be ſeen at the end of his Eſſays on Education. We are ſenſible that order is neceſſary in reading, but we cannot think that the ſame order will ſuit all minds, nor do we imagine that a young perſon cannot read to advantage unleſs he purſue a given courſe of ſtudy. Men of ſenſe will not be intolerant in their love of learned order.

If parents would keep an accurate liſt of the books which their children read, and of the ages at which they are read, it would be of eſſential ſervice in improving the art of education. We might then mark the progreſs of the underſtanding with accuracy, and diſcover, with ſome degree of certainty, the circum-

ſtances on which the formation of the character and taſte depend. Swift has given us a liſt of the books which he read during two years of his life; we can trace the ideas that he acquired from them in his Laputa, and in other parts of Gulliver's Travels. Gibbon's journal of his ſtudies, and his account of univerſities, are very inſtructive to young ſtudents. So is the life of Franklin written by himſelf. Madame Roland has left a hiſtory of her education, and in the books ſhe read in her early years we ſee the formation of her character. Plutarch's Lives, ſhe tells us, firſt kindled republican enthuſiaſm in her mind; and ſhe regrets that, in forming her ideas of univerſal liberty, ſhe had only a partial view of affairs. She corrected theſe enthuſiaſtic ideas during the laſt moments of her life in priſon. Had the impreſſion which her ſtudy of the Roman hiſtory made upon her mind been known to an able preceptor, it might have been corrected in her early education. When ſhe was led to execution, ſhe exclaimed, as ſhe paſſed the ſtatue of Liberty, "Oh Li-

" berty, what crimes are committed in thy " name* !"

Formerly it was wiſely ſaid, " Tell me what " company a man keeps, and I will tell you " what he is;" but ſince literature has ſpread a new influence over the world, we muſt add, " Tell me what company a man has kept, and " what books he has read, and I will tell you " what he is."

* " Oh Liberté, que de forfaits on commet en ton " nom !"

V. Appel à l'Impartielle Poſtérité.

CHAPTER XIII.

ON GRAMMAR, AND CLASSICAL LITERATURE.

AS long as gentlemen feel a deficiency in their own education, when they have not a competent knowledge of the learned languages, ſo long muſt a parent be anxious, that his ſon ſhould not be expoſed to the mortification of appearing inferior to others of his own rank. It is in vain to urge, that language is only the key to ſcience; that the names of things are not the things themſelves; that many of the words in our own language convey ſcarcely any, or at beſt but imperfect ideas; that the true genius, pronunciation, melody, and idiom of Greek, are unknown to the beſt ſcholars, and that it cannot reaſonably be doubted, that if

Homer or Xenophon were to hear their works read by a profeſſor of Greek, they would miſtake them for the ſounds of an unknown language. All this is true, but it is not the ambition of a gentleman to read Greek like an ancient Grecian, but to underſtand it as well as the generality of his contemporaries, to know whence the terms of moſt ſciences are derived, and to be able, in ſome degree, to trace the progreſs of mankind in knowledge and refinement, by examining the extent and combination of their different vocabularies.

In ſome profeſſions Greek is neceſſary, in all a certain proficiency in Latin is indiſpenſable; how, therefore, to acquire this proficiency in the one, and a ſufficient knowledge of the other, with the leaſt labour, the leaſt waſte of time, and the leaſt danger to the underſtanding, is the material queſtion. Some ſchoolmaſters would add, that we muſt expedite the buſineſs as much as poſſible: of this we may be permitted to doubt. *Feſtina lente* is one of the moſt judicious maxims in education, and thoſe who have ſufficient ſtrength of mind to adhere to it,

will find themſelves at the goal, when their competitors, after all their buſtle, are panting for breath, or laſhing their reſtive ſteeds. We ſee ſome untutored children ſtart forward in learning with rapidity: they ſeem to acquire knowledge at the very time it is wanted, as if by intuition; whilſt others, with whom infinite pains have been taken, continue in dull ignorance; or, having accumulated a maſs of learning, are utterly at a loſs how to diſplay, or how to uſe their treaſures. What is the reaſon of this phenomenon? and to which claſs of children would a parent wiſh his ſon to belong? In a certain number of years, after having ſpent eight hours a day in "durance vile," by the influence of bodily fear, or by the infliction of bodily puniſhment, a regiment of boys may be drilled by an indefatigable uſher into what are called ſcholars; but, perhaps, in the whole regiment, not one ſhall ever diſtinguiſh himſelf, or ever emerge from the ranks. Can it be neceſſary to ſpend ſo many years, ſo many of the beſt years of life, in toil and miſery? We ſhall calculate the waſte of time which ariſes from

the ſtudy of ill-written, abſurd grammar, and exerciſe-books; from the habits of idleneſs contracted by ſchool-boys; and from the cuſtom of allowing holidays to young ſtudents; and we ſhall compare the reſult of this calculation with the time really neceſſary for the attainment of the ſame quantity of claſſical knowledge by rational methods. We do not enter into this compariſon with any invidious intention, but ſimply to quiet the apprehenſions of parents; to ſhew them the poſſibility of their children's attaining a certain portion of learning within a given number of years, without the ſacrifice of health, happineſs, or the general powers of the underſtanding.

At all events, may we not begin by imploring the aſſiſtance of ſome able and friendly hand to reform the preſent generation of grammars and ſchool-books? For inſtance, is it indiſpenſably neceſſary that a boy of ſeven years old ſhould learn by rote, that "relative ſentences are inde-"pendent; *i. e.* no word in a relative ſentence "is governed either of verb, or adjective, that "ſtands in another ſentence, or depends upon

" any appurtenances of the relative; and that " the Engliſh word 'That' is always a relative " when it may be turned into *which* in good " ſenſe, which muſt be tried by reading over the " Engliſh ſentence *warily*, and judging how the " ſentence will bear it, but when it cannot be " altered, ſalvo ſenſu, it is a conjunction?" Cannot we, for pity's ſake, to aſſiſt the learner's memory, and to improve his intellect, ſubſtitute ſome ſentences a little more connected, and perhaps a little more uſeful, than the following?

" I have been a ſoldier—You have babbled " —Has the crow ever looked white?—Ye " have exerciſed—Flowers have withered— " We were in a paſſion—Ye lay down—Peas " were parched—The lions did roar a while " ago."

In a book of Latin exerciſes*, the preface to which informs us, that " it is intended to con- " tain ſuch precepts of morality and religion " as ought moſt induſtriouſly to be inculcated " into the heads of all learners, contrived ſo as

* Garretſon's Exerciſes, the tenth edition.

" that children may, as it were, inſenſibly ſuck " in ſuch principles as will be of uſe to them " afterwards in the manly conduct and ordering " of their lives;" we might expect ſomewhat more of pure morality, and ſenſe, with rather more elegance of ſtyle, than appear in the following ſentences.

" I ſtruck my ſiſter with a ſtick, and was " forced to flee into the woods; but when I " had tarried there awhile, I returned to my " parents and ſubmitted myſelf to their mercy, " and they forgave me my offence."

" When my dear mother, unknown to my " father, ſhall ſend me money, I will pay my " creditors their debts, and provide a ſupper " for all my friends in my chamber, without my " brother's conſent, and will make preſents to " all my relations."

So the meaſure of maternal tenderneſs is the ſum of money, which the dear mother, unknown to her huſband, ſhall ſend to her ſon; the meaſure of the ſon's generoſity is the ſupper he is to give to all his friends in his chamber, excluſive of his poor brother, of whoſe

offence we are ignorant. His munificence is to be diſplayed in making preſents to all his relations, but in the mean time he might poſſibly forget to pay his debts, for "juſtice is a "ſlow-paced virtue, and cannot keep pace with "generoſity."

A reaſonable notion of puniſhment, and a diſintereſted love of truth, is well introduced by the following picture. "My maſter's coun-"tenance was greatly changed when he found "his beloved ſon guilty of a lie. Sometimes "he was pale with anger, ſometimes he was "red with rage; and in the mean time, he, "poor boy, was trembling," (for what?) "for "fear of puniſhment." Could the ideas of puniſhment and vengeance be more effectually joined, than in this portrait of the maſter red with rage? After truth has been thus happily recommended, comes honeſty. "Many were "fellow ſoldiers with valiant Jaſon when he "ſtole the golden fleece: many were compa-"nions with him, but he bore away the glory "of the enterprize."

Valour, theft, and glory, are here happily combined. It will avail us nothing to obſerve, that the golden fleece has an allegorical meaning, unleſs we can explain ſatisfactorily the nature of an allegorical theft: though to our claſſical taſte this valiant Jaſon may appear a glorious hero, yet to the ſimple judgment of children he will appear a robber. It is faſtidious however to object to Jaſon in the exerciſe-book, when we conſider what children are to hear, and to hear with admiration, as they advance in their ſtudy of poetry and mythology.

Leſſons of worldly wiſdom are not forgotten in our manual, which profeſſes us to teach "*the manly conduct and ordering of life*" to the riſing generation. "Thoſe men," we are told, "who have the moſt money, obtain the greateſt "honour amongſt men." But then again, "A poor man is as happy without riches, *if* he "can enjoy contentedneſs of mind, as the rich-"eſt earl that coveteth greater honour." It may be uſeful to put young men upon their guard againſt hypocrites and knaves, but is

it neceſſary to tell ſchool-boys, that "it con-
"cerneth me, and all men, to look to ourſelves,
"for the world is ſo full of knaves and hypo-
"crites, that he is hard to be found that may
"be truſted." That "they who behave them-
"ſelves the moſt warily of all men, and that
"live more watchfully than others, may happen
"to do ſomething, which (if it be divulged)
"may very much damnify their reputation."
A knowledge of the world may be eaſily re-
quiſite, but is it not going too far to aſſure
young people, that "the nations of the world
"are at this time come to that paſs of wick-
"edneſs, that the earth is like Hell, and
"many men have degenerated into devils?"

A greater variety of ridiculous paſſages from this tenth edition of Garretſon's Exerciſe-book might be ſelected for the reader's entertainment; but the following ſpecimens will be ſufficient to ſatisfy him, that by this original writer natural hiſtory is as well taught as morality.

Man. "Man is a creature of an upright
"body; he walketh upright when he is in a

" journey; and when night approacheth he lieth " flat, and ſleepeth."

Horſes. " A journey an hundred and fifty " miles long tireth an horſe that hath not had a " moderate feed of corn."

Air, Earth, Fire, and Water. " The air is " nearer the earth than the fire; but the water " is placed neareſt to the earth, becauſe theſe " two elements compoſe but one body."

It is an eaſy taſk, it will be obſerved, to ridicule abſurdity. It is eaſy to pull down what has been ill built; but if we leave the ruins for others to ſtumble over, we do little good to ſociety. Parents may reaſonably ſay, if you take away from our children the books they have, give them better. They are not yet to be had, but if a demand for them be once excited, they will ſoon appear.* Parents are now convinced, that the firſt book which children read make a laſting impreſſion upon them; but they do not ſeem to conſider ſpelling-

* Since the firſt edition of this work we have ſeen with pleaſure An Engliſh Grammar—Engliſh Exerciſes—and a Key to the Engliſh Exerciſes, by Mr. Lindley Murray.

books, and grammars, and exercise-books, as books, but only as tools for different purposes: these tools are often very mischievous; if we could improve them we should get our work much better done. The barbarous translations, which are put as models for imitation into the hands of school-boys, teach them bad habits of speaking and writing, which are sometimes incurable. For instance, in the fourteenth edition of Clarke's Cornelius Nepos, which the preface informs us was written by a man full of indignation for the common practices of grammar schools, by a man who laments that youth should spend their time "in "tossing over the leaves of a dictionary, and "hammering out such a language as the La-"tin," we might expect some better translation than the following to form the young student's style.

"Nobody ever heard any other entertain-"ment for the ears at *his* (Atticus's) meals "than a reader, which we truly think very "pleasant. Nor was there ever a supper at his "house without some reading, that their guests

"might be entertained in their minds as "well as their ſtomachs; *for* he invited thoſe "whoſe manners were not different from his "own."

"He (Atticus) likewiſe had a touch at poe-"try, that he might not be unacquainted with "this pleaſure we ſuppoſe. *For* he has related "in verſes the lives of thoſe who excelled the "Roman people in honour, and the greatneſs "of their exploits. *So* that he has deſcribed "under each of their images, their actions "and offices in no more than four or five ver-"ſes, *which* is ſcarcely to be believed *that* "ſuch great things could be ſo briefly deli-"vered."

Thoſe who in reading theſe quotations have perhaps exclaimed, "Why muſt we go through "this farrago of nonſenſe?" ſhould reflect, that they have now waſted but a few minutes of their time upon what children are doomed to ſtudy for hours and years. If a few pages diſguſt, what muſt be the effect of volumes in the ſame ſtyle! and what ſort of writing can we expect from pupils who are condemned to ſuch read-

ing? The analogy of ancient and modern languages differs ſo materially, that a literal tranſlation of any ancient author can ſcarcely be tolerated. Yet, in general, young ſcholars are under a neceſſity of *rendering* their Latin leſſons into Engliſh word for word, faithful to the taſte of their dictionaries, or the notes in their tranſlations. This is not likely to improve the freedom of their Engliſh ſtyle; nor, what is of much more conſequence, is it likely to preſerve in the pupil's mind a taſte for literature. It is not the time that is ſpent in poring over lexicons, it is not the multiplicity of rules learnt by rote, nor yet is it the quantity of Latin words crammed into the memory, which can give the habit of attention or the power of voluntary exertion: without theſe you will never have time enough to teach, with them there will always be time enough to learn. One half hour's vigorous application is worth a whole day's conſtrained and yawning *ſtudy*. If we compare what from experience we know can be done by a child of ordinary capacity in a given time, with what he actually does in

ſchool-hours, we ſhall be convinced of the enormous waſte of time incident to the common methods of inſtruction. Tutors are ſenſible of this; but they throw the blame upon their pupils. "You could have learned your leſſon in half the time if you had choſen it." The children alſo are ſenſible of this, but they are not able or willing to prevent the repetition of the reproach. But exertion does not always depend upon the will of the boy; it depends upon his previous habits, and upon the ſtrength of the immediate motive which acts upon him. Some children of quick abilities, who have too much time allotted for their claſſical ſtudies, are ſo fully ſenſible themſelves of the pernicious effect this has upon their activity of mind, that they frequently defer *getting their leſſons* to the laſt moment, that they may be forced by a ſufficient motive to exert themſelves. In *claſſes* at public ſchools, the quick and the ſlow, the active and indolent, the ſtumbling and the ſure-footed, are all yoked together, and are forced to keep pace with one another: ſtu-

pidity may ſometimes be dragged along by the vigour of genius; but genius is more frequently chained down by the weight of ſtupidity. We are well aware of the difficulties with which the public preceptor has to contend; he is often compelled by his ſituation to follow ancient uſage, and to continue many cuſtoms which he wiſhes to ſee reformed. Any reformation in the manner of inſtruction in theſe public ſeminaries muſt be gradual, and will neceſſarily follow the conviction that parents may feel of its utility. Perhaps nothing can be immediately done, more practicably uſeful, than to ſimplify grammar, and to lighten as much as poſſible the load that is laid upon the memory. Without a multiplicity of maſters it would be impoſſible to ſuit inſtruction to the different capacities, and previous acquirements of a variety of pupils; but in a private education, undoubtedly the taſk may be rendered much eaſier to the ſcholar and to the teacher, much jargon may be omitted, and what appears from want of explanation to be jargon, may be rendered intelligible by proper ſkill and attention: du-

ring the firſt leſſons in grammar, and in Latin, the pupil need not be diſguſted with literature, and we may apply all the principles which we find on other occaſions ſucceſsful in the management of the attention. Inſtead of keeping the attention feebly obedient for an idle length of time, we ſhould fix it decidedly by ſome ſufficient motive for as ſhort a period as may be requiſite to complete the work that we would have done. As we apprehend, that even where children are to be ſent to ſchool, it will be a great advantage to them to have ſome general notions of grammar, to lead them through the labyrinth of common ſchool books, we think that we ſhall do the public preceptor an acceptable ſervice, if we point out the means by which parents may, without much labour to themſelves, render the firſt principles of grammar intelligible and familiar to their children.

We may obſerve, that children pay the ſtricteſt attention to the analogies of the language that they ſpeak. Where verbs are defective or irregular, they ſupply the parts that are wanting

with wonderful facility, according to the common form of other verbs. They make all verbs regular. I go*ed*, I read*ed*, I writ*ed*, &c. By a proper application of this faculty much time may be ſaved in teaching children grammar, much perplexity, and much of that ineffectual labour which ſtupifies and diſpirits the underſtanding. By gentle degrees a child may be taught the relations of words to each other in common converſation, before he is preſented with the firſt ſample of grammatical eloquence in Lily's Accidence. "There be eight parts "of ſpeech." A phraſe which in ſome parts of this kingdom would perhaps be underſtood, but which to the generality of boys who go to ſchool conveys no meaning, and is got by heart without reflection, and without advantage. A child can, however, be made to underſtand theſe formidable parts of ſpeech, if they are properly introduced to his acquaintance: he can comprehend, that ſome of the words which he hears expreſs *that ſomething is done*; he will readily perceive, that if ſomething is done, ſomebody, or ſomething muſt do it; he will

diſtinguiſh with much facility the word in any common ſentence which expreſſes an action, and that which denotes the agent. Let the reader try the experiment immediately upon any child of ſix or ſeven years old who has *not* learned grammar, and he may eaſily aſcertain the fact.

A few months ago, Mr. —— gave his little daughter H——, a child of five years old, her firſt leſſon in Engliſh grammar; but no alarming book of grammar was produced upon the occaſion, nor did the father put on an unpropitious gravity of countenance. He explained to the ſmiling child the nature of a verb, a pronoun, and a ſubſtantive.

Then he ſpoke a ſhort familiar ſentence, and aſked H—— to try if ſhe could find out which word in it was a verb, which a pronoun, and which a ſubſtantive. The little girl found them all out moſt ſucceſsfully, and formed no painful aſſociations with her firſt grammatical leſſon. Though our pupil may eaſily underſtand, he will eaſily forget our firſt explanations; but provided he underſtand them at the moment, we ſhould

pardon his forgetfulneſs, and we ſhould patiently repeat the ſame exerciſe ſeveral days ſucceſſively; a few minutes at each leſſon will be ſufficient, and the ſimpleſt ſentences, ſuch as children ſpeak themſelves, will be the beſt examples. Mr. ——, after having talked four or five times, for a few minutes at a time, with his ſon S——, when S—— was between five and ſix years old, about grammar, aſked him if he knew what a pronoun meant? The boy anſwered, "A word that is ſaid inſtead of a "ſubſtantive." As theſe words might have been merely remembered by rote, the father queſtioned his pupil further, and aſked him to name any pronoun that he recollected. S—— immediately ſaid, "*I* a pronoun." "Name "another," ſaid his father. The boy anſwered after ſome pauſe, as if he doubted whether it was or was not a pronoun, *A*. Now it would have been very imprudent to have made a ſudden exclamation at the child's miſtake. The father, without ſhewing any ſurpriſe, gently anſwered, "No, my dear, *a* does not ſtand in "the place of any ſubſtantive. We ſay *a man*,

" but the word *a* does not mean a *man*, when " it is ſaid by itſelf? Does it?"

S——. No.

Father. Then try if you can find out a word that does.

S——. He, and *Sir*.

Sir does ſtand, in converſation, in the place of a man, or gentleman; therefore the boy, even by this miſtake, ſhewed that he had formed, from the definition that had been given to him, a general idea of the nature of a pronoun, and at all events he exerciſed his underſtanding upon the affair, which is the principal point we ought to have in view.

An interjection is a part of ſpeech familiar to children. Mr. Horne Tooke is bitter in his contempt for it, and will ſcarcely admit it into civiliſed company. " The brutiſh inarticulate " interjection, which has nothing to do with " ſpeech, and is only the miſerable refuge of " the ſpeechleſs, has been permitted to uſurp " a place amongſt words, &c."—" The neigh- " ing of a horſe, the lowing of a cow, the " barking of a dog, the purring of a cat; ſneez-

" ing, coughing, groaning, ſhrieking, and every " other involuntary convulſion with oral ſound, " have almoſt as good a title to be called parts " of ſpeech as interjections have."

Mr. Horne Tooke would have been pleaſed with the ſagacity of a child of five years old (S——), who called *laughing* an interjection. Mr. —— gave S—— a ſlight pinch, in order to produce " an involuntary convulſion with " oral ſound." And when the interjection Oh! was uttered by the boy, he was told by his father, that the word was an interjection; and, that " any word or noiſe, that expreſſes a ſud- " den feeling of the mind, may be called an " interjection." S—— immediately ſaid, " Is " laughing an interjection, then?" We hope that the candid reader will not imagine, that we produce theſe *ſayings* of children of four or five years old, without ſome ſenſe of the danger of ridicule; but we wiſh to give ſome idea of the ſort of ſimple anſwers which children are likely to make in their firſt grammatical leſſons. If too much is expected from them, the diſappointment, which muſt be quickly felt, and

will be quickly ſhewn by the preceptor, will diſcourage the pupil. We muſt repeat, that the firſt ſteps ſhould be frequently retraced; a child ſhould be *for ſome weeks* accuſtomed to diſtinguiſh an active verb, and its agent, or nominative caſe, from every other word in a ſentence before we attempt to advance. The objects of actions are the next claſs of words that ſhould be ſelected.

The fanciful, or at leaſt what appears to the moderns fanciful, arrangement of the caſes amongſt grammarians, may be diſpenſed with for the preſent. The idea that the nominative is a direct, upright *caſe*, and that the genitive declines with the ſmalleſt obliquity from it; the dative, accuſative, and ablative, falling farther and farther from the perpendicularity of ſpeech, is a ſpecies of metaphyſics not very edifying to a child. Into what abſurdity men of abilities may be led by the deſire of explaining what they do not ſufficiently underſtand, is fully exemplified in other ſciences as well as grammar.

The diſcoveries made by the author of Epea pteroenta ſhew the difference between a vain

attempt to ſubſtitute analogy and rhetoric in the place of demonſtration and common ſenſe. When a child has been patiently taught in converſation to analyſe what he ſays, he will take great pleaſure in the exerciſe of his new talent; he will ſoon diſcover, that the cauſe of the action does not always come before the verb in a ſentence, that ſometimes it follows the verb. "John beats Thomas," and "Thomas is beaten "by John," he will perceive mean the ſame thing; he may, with very little difficulty, be taught the difference between a verb active and a verb paſſive; that one brings firſt before the mind the perſon or thing which performs the action, and the other repreſents in the firſt place the perſon or thing upon whom the action is performed. A child of moderate capacity, after he has been familiariſed to this general idea of a verb active and paſſive, and after he has been taught the names of the caſes, will probably, without much difficulty, diſcover that the nominative caſe to a paſſive verb becomes the accuſative caſe to a verb active. "Schoolmaſters "are plagued by boys." A child ſees plainly

that ſchoolmaſters are the perſons upon whom the action of plaguing is performed, and he will convert the ſentence readily into " boys plague " ſchoolmaſters."

We need not be in any hurry to teach our pupil the names of the caſes; technical grammar may be eaſily learned, after a general idea of rational grammar has been obtained. For inſtance, *the verb* means only *the word*, or the principal word in a ſentence; a child can eaſily learn this, after he has learnt what is meant by a ſentence; but it would be extremely difficult to make him comprehend it before he could diſtinguiſh a verb from a noun, and before he had any idea of the ſtructure of a common ſentence. From eaſy we ſhould proceed to more complicated ſentences. The grammatical conſtruction of the following lines, for example, may not be immediately apparent to a child.

" What modes of ſight betwixt each vaſt extreme,
" The mole's dim curtain, and the lynx's beam;
" Of ſmell the headlong lioneſs between,
" And hound ſagacious on the tainted green."

" *Of ſmell.*" A girl of ten years old (C——)

was aſked if ſhe could tell what ſubſtantive the word "*of*" relates to; ſhe readily anſwered, "*modes*." C—— had learned a general idea of grammar in converſation, in the manner which we have deſcribed. It is aſſerted from experience, that this method of inſtructing children in grammar by converſation is not only practicable, but perfectly eaſy, and that the minds of children are adapted to this ſpecies of knowledge. During life we learn with eagerneſs whatever is congenial with our preſent purſuits, and the acquiſition of language is one of the moſt earneſt occupations of childhood. After diſtinct, and ready knowledge of the verb and nominative caſe have been acquired, the pupil ſhould be taught to diſtinguiſh the object of an action, or, in other words, the objective or accuſative caſe. He ſhould be exerciſed in this, as in the former leſſons, repeatedly, till it becomes perfectly familiar; and he ſhould be encouraged to converſe about theſe leſſons, and to make his own obſervations concerning grammar, without fear of the preceptor's peremptory frown, or poſitive reference to "*his*

" *rules.*" A child of five years old was aſked what the word " *Here!*" meant; he anſwered, " It means to give a thing."

" When I call a perſon, as, John! John!" ſaid a boy of nine years old, (S——) " it ſeems " to me that the vocative caſe is both the verb, " and its accuſative caſe." A boy who had been ever checked by his tutor for making his own obſervations upon the myſterious ſubject of grammar, would never have dared to have thought, or to have uttered a new thought ſo freely. Forcing children to learn any art or ſcience by rote, without permitting the exerciſe of the underſtanding, muſt materially injure their powers both of reaſoning and of invention. We acknowledge that Wilkins and Tooke have ſhewn maſters how to teach grammar a little better than it was formerly taught. Fortunately for the riſing generation, all the words under the denomination of adverbs, prepoſitions, and conjunctions, which were abſolute nonſenſe to us, may be eaſily explained to them, and the commencement of inſtruction need no longer lay the foundation of implicit acquieſcence in

nonſenſe. We refer to Mr. Horne Tooke's "Epea pteroenta," forbearing to dilate upon the principles of his work, leſt we ſhould appear in the invidious light of authors who rob the works of others to adorn their own. We cannot help expreſſing a wiſh, that Mr. Horne Tooke would have the philanthropic patience to write an elementary work in a *ſimple ſtyle*, unfolding his grammatical diſcoveries to the riſing generation.

When children have thus by gentle degrees, and by ſhort and clear converſations, been initiated in general grammar, and familiariſed to its technical terms, the firſt page of tremendous Lilly will loſe much of its horror. It has been taken for granted, that at the age of which we have been ſpeaking a child can read Engliſh tolerably well, and that he has been uſed to employ a dictionary. He may now proceed to tranſlate from ſome eaſy books a few ſhort ſentences: the firſt word will probably be an adverb or prepoſition; either of them may readily be found in the Latin dictionary, and the young ſcholar will exult in having tranſlated one word

of Latin; but the next word, a ſubſtantive or verb, perhaps will elude his ſearch. Now the grammar may be produced, and ſomething of the various terminations of a noun may be explained. If *muſam* be ſearched for in the dictionary, it cannot be found, but *muſa* catches the eye, and with the aſſiſtance of the grammar it may be ſhewn, that the meaning of words may be diſcovered by the united helps of the dictionary and grammar. After ſome days patient continuation of this exerciſe, the uſe of the grammar, and of its uncouth collection of words and ſyllables, will be apparent to the pupil: he will perceive that the grammar is a ſort of appendix to the dictionary. The grammatical formulæ may then by gentle degrees be committed to memory, and when once got by heart they ſhould be aſſiduouſly preſerved in the recollection. After the preparation which we have recommended, the ſingular number of a declenſion will be learnt in a few minutes by a child of ordinary capacity, and after two or three days repetition the plural number may be added. The whole of the firſt declenſion ſhould

be well fixed in the memory before a ſecond is attempted. During this proceſs a few words at every leſſon may be tranſlated from Latin to Engliſh, and ſuch nouns as are of the firſt declenſion may be compared with *muſa*, and may be declined according to the ſame form. Tedious as this method may appear, in will in the end be found expeditious. Omitting ſome of the theoretic or didactic part of the grammar, which ſhould only be read, and which may be explained with care and patience, the whole of the declenſions, pronouns, conjugations, the liſt of prepoſitions and conjunctions, interjections, ſome adverbs, the concords, and common rules of ſyntax, may be compriſed with ſufficient repetitions in about two or three hundred leſſons of ten minutes each: that is to ſay, ten minutes application of the ſcholar in the preſence of the teacher. A young boy ſhould never be ſet to learn a leſſon by heart when alone. Forty hours! Is this tedious? If you are afraid of loſing time, begin a few months earlier; but begin when you will, forty hours is ſurely no great waſte of time: the whole, or even half of

this ſhort time, is not ſpent in the labour of getting jargon by rote; each day ſome ſlight advance is made in the knowledge of words, and in the knowledge of their combinations. What we inſiſt upon is, that *nothing ſhould be done to diſguſt the pupils:* ſteady perſeverance, with uniform gentleneſs, will induce habit, and nothing ſhould ever interrupt the regular return of the daily leſſon. If abſence, buſineſs, illneſs, or any other cauſe, prevent the attendance of the teacher, a ſubſtitute muſt be appointed; the idea of relaxation on Sunday, or a holiday, ſhould never be permitted. In moſt public ſeminaries above one third, in ſome nearly one half, of the year is permitted to idleneſs; it is the compariſon between ſevere labour and diſſipation that renders learning hateful.

Johnſon is made to ſay by one of his female biographers*, that no child loves the perſon who teaches him Latin; yet the author of this chapter would not take all the doctor's fame, and all the lady's wit and riches, in exchange

* Mrs. Piozzi.

for the hourly, unfeigned, unremitting friendſhip, which he enjoys with a ſon who had no other maſter than his father. So far from being laborious or troubleſome, he has found it an agreeable employment to inſtruct his children in grammar and the learned languages. In the midſt of a variety of other occupations, half an hour every morning for many years, during the time of dreſſing, has been allotted to the inſtruction of boys of different ages in languages, and no other time has been ſpent in this employment. Were it aſſerted that theſe boys made *a reaſonable progreſs*, the expreſſion would convey no diſtinct meaning to the reader, we ſhall therefore mention an experiment tried this morning, November 8th, 1796, to aſcertain the progreſs of one of theſe pupils. Without previous ſtudy he tranſlated twenty lines of the ſtory of Ceyx and Alcyone, from Ovid, conſulting the dictionary only twice: he was then deſired to tranſlate the paſſage which he had read into Engliſh verſe; and in two or three hours he produced the following verſion. Much of the time was ſpent in copying the lines fairly, as this

opportunity was taken of exciting his attention to writing and ſpelling, to aſſociate the habit of application with the pleaſure of voluntary exertion. The *curious* may, if they think it worth their while, ſee the various *readings* and corrections of the tranſlation, which were carefully preſerved, not as "*Curioſities of Litera-*"*ture*," but for the ſake of truth, and with a deſire to ſhew that the pupil had the patience to correct*. A *genius* may hit off a few tolerable lines; but if a child is willing and able to criticiſe and correct what he writes, he ſhews that he ſelects his expreſſions from choice, and not from chance or imitation; and he gives to a judicious tutor the certain promiſe of future improvement.

" Far in a vale there lies a cave forlorn,
" Which Phœbus never enters eve or morn.
" The miſty clouds inhale the pitchy ground,
" And twilight lingers all the vale around.
" No watchful cocks Aurora's beams invite,
" No dogs, nor geeſe, the guardians of the night,
" No flocks nor herds diſturb the ſilent plains;
" Within the ſacred walls mute quiet reigns,

* Appendix.

"And murmuring Lethe ſoothing ſleep invites.
"In dreams again the flying paſt delights;
"From milky flowers that near the cavern grow,
"Night ſcatters the collected ſleep below."

S——, the boy who made this tranſlation, was juſt ten years old; he had made but three previous attempts in verſification; his reading in poetry had been ſome of Gay's fables, parts of the Minſtrel, three odes of Gray, the Elegy in a Country Church-yard, the Tears of old May-day, and parts of the ſecond volume of Dr. Darwin's Botanic Garden; Dryden's tranſlation of the fable of Ceyx and Alcyone he had never ſeen; the book had always been locked up. Phædrus and Ovid's Metamorphoſes were the whole of his Latin erudition. Theſe circumſtances are mentioned thus minutely, to afford the inquiſitive teacher materials for an accurate eſtimate of the progreſs made by our method of inſtruction. Perhaps moſt boys of S——'s age, in our great public ſeminaries, would upon a ſimilar trial be found ſuperior. Competition in the art of tranſlation is not our object; our object is to ſhew, that half an hour a day, ſteadily

appropriated to grammar and Latin, will be ſufficient to ſecure a boy of this age from any danger of ignorance in claſſical learning; and that the eaſe and ſhortneſs of his labour will prevent that diſguſt which is too often induced by forced and inceſſant application. We may add, that ſome attention to the *manner* in which the pupils repeat their Latin leſſons has been found advantageous; as they were never put in bodily fear by the impatience of a pedagogue, they had leiſure and inclination to read and recite without awkward geſtures, and diſcordant tones. The whining tones and convulſive geſtures often contracted by boys during the agony of repeating their long leſſons, are not likely to be advantageous to the riſing generation of orators. Practice, and the ſtrong motive of emulation, may in a public ſeminary conquer theſe bad habits. After the pupil has learned to ſpeak ill, he *may* be taught to ſpeak well; but the chances are againſt him: and why ſhould we have the trouble of breaking bad habits? it is much eaſier to prevent them. In

private education, as the preceptor has leſs chance of curing his pupil of the habit of ſpeaking ill, he ſhould be peculiarly attentive to give the child conſtant habits of ſpeaking and reading well. It is aſtoniſhing, that parents, who are extremely intent upon the education of their children, ſhould overlook ſome of the eſſential means of ſucceſs. A young man with his head full of Latin and law will make but a poor figure at the bar, or in parliament, if he cannot enunciate diſtinctly, and if he cannot ſpeak good Engliſh extempore, or produce his learning and arguments with grace and propriety. It is in vain to expect that a boy ſhould ſpeak well in public, who cannot in common converſation utter three connected ſentences without a falſe concord or a provincial idiom; he may be taught with much care and coſt to ſpeak *tripod* ſentences *; but bring the young orator to the teſt, bring him to actual buſineſs, rouſe any of his paſſions, throw him off his guard, and then liſten to his language; he will forget

* V. Blair.

inſtantly his reading maſter, and all his rules of pronunciation and rhetoric, and he will ſpeak the language to which he has been moſt accuſtomed. No maſter will then be near him to regulate the pitch and tones of his voice; we cannot believe that even Caius Gracchus could, when he was warmed by paſſion, have liſtened to Licinius's pitch-pipe *. Example, and conſtant attention to their manner of ſpeaking in common converſation, we apprehend to be the moſt certain methods of preparing young men for public ſpeakers. Much of the time that is ſpent in teaching boys to walk upon ſtilts might be more advantageouſly employed in teaching them to walk well without them. It is all very well whilſt the pupil is under the protection of his preceptor. The actor on the ſtage is admired whilſt he is elevated by the cothurnus; but young men are not to exhibit their oratorical talents always with the advantages of ſtage effect and decorations. We ſhould imagine that much of the diffidence felt by young men of abilities, when they firſt ariſe to ſpeak in public,

* V. Plutarch.

may be attributed to their immediate perception of the difference between ſcholaſtic exhibitions and the real buſineſs of life; they feel that they have learned to ſpeak two languages which muſt not, upon any account, be mixed together; the one, the vulgar language of common converſation; the other the refined language of oratorical compoſition: the firſt they are moſt inclined to uſe when they are agitated; and they are agitated when they riſe to ſpeak before numbers: conſequently there is an immediate ſtruggle between cuſtom and inſtitution. Now, a young man, who in common converſation in his own family has never been accuſtomed to hear or to ſpeak vulgar or ungrammatical language, cannot poſſibly apprehend that he ſhall ſuddenly utter ridiculous expreſſions; he knows, that, if he ſpeaks at all, he ſhall at leaſt ſpeak good Engliſh, and he is not afraid, that, if he is purſued, he ſhall be obliged to throw away his cumbrous ſtilts. The practice of ſpeaking in public, we are ſenſible, is a great advantage; but the habit of ſpeaking accurately in private is of ſtill greater conſe-

quence: this habit depends upon the early and perſevering care of the parent and the preceptor. There is no reaſon why children ſhould not be made at the ſame time good ſcholars, and good ſpeakers: nor is there any reaſon why boys, whilſt they learn to write Latin, ſhould be ſuffered to forget how to write Engliſh.

It would be a great advantage to the young claſſical ſcholar if his Latin and Engliſh literature were mixed; the taſte for ancient authors and for modern literature ought to be cultivated at the ſame time, and the beauties of compoſition, characteriſtic of different languages, ſhould be familiariſed to the ſtudent. Claſſical knowledge and taſte afford ſuch continual and innocent ſources of amuſement, that we ſhould be extremely ſorry that any of our pupils ſhould not enjoy them in their fulleſt extent; but we do not include a talent for Latin compoſition amongſt the *neceſſary* accompliſhments of a gentleman. There are ſituations in life where facility and elegance in writing Latin may be uſeful, but ſuch ſituations are not common; when a young man is intended for them, he

may be trained with more particular aſſiduity to this art; perhaps for this purpoſe the true Buſbyean method is the beſt. The great Latin and Greek ſcholars of the age have no reaſon to be diſpleaſed by the aſſertion, that claſſical proficiency equal to their own is not a *neceſſary* accompliſhment in a gentleman; if their learning become more rare, it may thence become more valuable. We ſee no reaſon why there ſhould not be Latiniſts as well as ſpecial pleaders.

We have not laid down any courſe of claſſical ſtudy; thoſe who conſider the order in which certain authors are read, as of material conſequence in the education of ſcholars, may conſult Milton, Mrs. Macaulay, "Milne's Well-bred Scholar," &c. where they will find preciſe directions.

We have *lately* ſeen a collection of exerciſes for boys*, which in ſome meaſure ſupplies the defects of Mr. Garretſon's curious performance; we wiſh moſt earneſtly that dictionaries were improved. The author of "Stemmata

* Valpy's Exerciſes.

"Latinitatis" has conferred an eſſential ſervice on the public; but ſtill there is wanting a dictionary for ſchools, in which elegant and proper Engliſh might be ſubſtituted for the barbarous tranſlations now in uſe. Such a dictionary could not be compiled, we ſhould think, without an attention to the courſe of books that are moſt commonly uſed in ſchools. The firſt meanings given in the dictionary ſhould ſuit the firſt authors that a boy reads; this may probably be a remote or metaphoric meaning: then the radical word ſhould be mentioned, and it would not coſt a maſter any great trouble to trace the genealogy of words to the parent ſtock.

Cordery is a collection of ſuch mean ſentences, and uninſtructive dialogue, as to be totally unfit for boys. Commenius's "Viſible "World diſplayed" is far ſuperior, and might, with proper alterations and better prints, become a valuable *Engliſh* ſchool book. Both theſe books were intended for countries where the Latin language was commonly ſpoken, and conſequently they are filled with the terms neceſſary for domeſtic life and converſation: for

this very reaſon they are not good introductions to the claſſics. Selections from Bailey's Phædrus will be proper for young beginners upon account of the gloſſary. We prefer this mode of aſſiſting them with a gloſſary to the uſe of tranſlations, becauſe they do not induce indolent habits, and yet they prevent the pupil from having unneceſſary labour. Tranſlations always give the pupil more trouble in the end, than they ſave in the beginning. The gloſſaries to Bailey's Phædrus, which we have juſt mentioned, wants much to be modernized, and the language requires to be improved. Mr. Valpy's "Select Sentences" would be much more uſeful if they had a gloſſary annexed. As they are, they will, however, be uſeful after Phædrus. Ovid's Metamorphoſes, with all its monſtrous faults, appears to be the beſt introduction to the Latin claſſics, and to heathen mythology. Norris's Ovid may be ſafely put into the hands of children, as it is a ſelection of the leaſt exceptionable fables. To accuſtom boys to read poetry and proſe nearly at the ſame period is advantageous. Cornelius Nepos, a *crabbed*

book, but uſeful from its brevity, and from its being a proper introduction to Grecian and Roman hiſtory, may be read nearly at the ſame time with Ovid's Metamorphoſes. After Ovid, the pupil may begin Virgil, poſtponing ſome of the Eclogues, and all the Georgics.

We recommend that ſome Engliſh books ſhould be put into the hands of boys whilſt they are going through Phædrus, Ovid, and Cornelius Nepos, which may ſuit with the ideas they acquire from theſe Latin authors. Plutarch's Lives, for inſtance, will be uſeful and intereſting. When we mention Plutarch's Lives, we cannot help recollecting how many great people have acknowledged the effect of this book in their early education. Charles the Twelfth, Rouſſeau, Madame Roland, Gibbon, we immediately remember, and we are ſure we have noticed many others. An abridgment of Plutarch, by Mrs. Helme, which we have looked into, appears (the preface excepted) to be well written; and we ſee another abridgment of Plutarch advertiſed, which we hope may prove

ſerviceable: good prints to a Plutarch for children would be very deſirable.

As an Engliſh introduction to mythology, we recommend the firſt volume of Lord Cheſterfield's Letters, as a moſt elegant view of heathen mythology. But if there be any danger that the firſt volume ſhould introduce the remainder of Lord Cheſterfield's work to the inexperienced reader, we ſhould certainly forbear the experiment: it would be far better for a young man never to be acquainted with a ſingle heathen deity, than to purchaſe Lord Cheſterfield's claſſical knowledge at the hazard of contamination from his deteſtable ſyſtem of morals. Without his lordſhip's aſſiſtance, Mrs. Monſigny's Mythology can *properly* initiate the young pupil of either ſex into the myſteries of ancient fable. The notes to Potter's Æſchylus are alſo well ſuited to our purpoſe. In Dr. Darwin's "Botanic Garden" there are ſome beautiful poetic alluſions to ancient gems and ancient fables, which muſt fix themſelves in the memory or the imagination of the pupil. The ſooner they are read the better; we have

felt the advantage of putting them into the hands of a boy of nine or ten years old. The ear ſhould be formed to Engliſh as well as to Latin poetry.

Claſſical poetry, without the knowledge of mythology, is unintelligible: if children ſtudy the one, they muſt learn the other. Diveſted of the charms of poetry, and conſidered without claſſical prepoſſeſſion, mythology preſents a ſyſtem of crimes and abſurdities, which no allegorical, metaphyſical, or literal interpreters of modern times, can perfectly reconcile to common ſenſe, or common morality; but our poets have naturalized ancient fables, ſo that mythology is become eſſential even to modern literature. The aſſociations of taſte, though arbitrary, are not eaſily changed in a nation whoſe literature has attained to a certain pitch of refinement, and whoſe critical judgments muſt conſequently have been for ſome generations traditional. There are ſubjects of popular alluſion which poets and orators regard as common property; to diſpoſſeſs them of theſe ſeems impracticable, after time has ſanctioned the

preſcriptive right. But new knowledge, and the cultivation of new ſciences, preſent objects of poetic alluſion which, ſkilfully managed by men of inventive genius, will oppoſe to the habitual reverence for antiquity, the charms of novelty united to the voice of philoſophy*.

In education we muſt, however, conſider the actual ſtate of manners in that world in which our pupils are to live, as well as our wiſhes or our hopes of its gradual improvement†. With a little care preceptors may manage ſo as to teach mythology without in the leaſt injuring their pupils. Children may be familiariſed to the ſtrange manners and ſtrange perſonages of ancient fable, and may conſider them as a ſet of beings who are not to be judged by any rules of morality, and who have nothing in common with ourſelves. The caricatura of ſome of the paſſions, perhaps, will not ſhock

* V. Darwin's poetry.

† Since the above was written, we have ſeen a letter from Dr. Aikin to his ſon on the *morality* and *poetic merits* of the fable of Circe, which convinces us that the obſervations that we have hazarded are not premature.

children who are not uſed to their natural appearance; they will paſs over the ſtories of love and jealouſy, merely becauſe they do not underſtand them. We ſhould rather leave them completely unintelligible, than attempt, like Mr. Riley, in his mythological pocket dictionary for youth, to elucidate the whole at once, by aſſuring children that Saturn was Adam, that Atlas is Moſes, and his brother Heſperus, Aaron; that Vertumnus and Pomona were Boaz and Ruth; that Mars *correſponds* with Joſhua; that Apollo *accords* with David, ſince they both played upon the harp; that Mercury can be no other than our Archangel Michael, ſince they both have wings on their arms and feet; that, in ſhort, to complete the concordance, Momus is a ſtriking likeneſs of Satan. The ancients, Mr. Riley allows, have ſo much disfigured theſe perſonages, that it is hard to know many of the portraits again at firſt ſight; however, he is perſuaded that "the young ſtudent will "find a peculiar gratification in tracing the likeneſs," and he has kindly furniſhed us with a

catalogue to explain the exhibition, and to guide us through his new pantheon.

As books of reference, the convenient ſize, and compreſſed information of *pocket* mythological dictionaries, will recommend them to general uſe; but we object to the miſerable prints with which they are ſometimes diſgraced. The firſt impreſſion made upon the imagination of children is of the utmoſt conſequence to their future taſte. The beautiful engravings * in Spence's Polymetis will introduce the heathen deities in their moſt graceful and pictureſque forms to the fancy. The language of Spence, though claſſical, is not entirely free from pedantic affectation, and his dialogues are perhaps too ſtiff and long winded for our young pupils. But a parent or preceptor can eaſily ſelect the uſeful explanations, and in turning over the prints they can eaſily aſſociate ſome general notion of the hiſtory and attributes of the gods and goddeſſes with their forms; the

* We ſpeak of theſe engravings as *beautiful*, for the times in which they were done; modern artiſts have arrived at higher perfection.

little eager ſpectators will, as they crowd round the book, acquire imperceptibly all the neceſſary knowledge of mythology, imbibe the firſt pleaſing ideas of taſte, and ſtore their imagination with claſſic imagery. The ſame precautions that are neceſſary to educate the eye, are alſo neceſſary to form the ear and underſtanding of taſte. The firſt mythological deſcriptions which our pupils read, ſhould be the beſt in their kind. Compare the following account of Europa in a pocket dictionary, with her figure in a poetical gem. "Europa, the daughter of Agenor, king of the Phœnicians, and ſiſter of Cadmus. This princeſs was ſo beautiful, that they ſay, one of the companions of Juno had robbed her of a pot of paint to beſtow on this lady, which rendered her ſo handſome. She was beloved of Jupiter, who aſſumed the ſhape of a bull to run away with her, ſwam over the ſea with her on his back, and carried her into that part of the world now called Europe from her name." So far the dictionary; now for the poet.

"Now lows a milk-white bull on Afric's ſtrand,
"And crops with dancing head the daiſy'd land;
"With roſy wreaths Europa's hand adorns
"His fringed forehead and his pearly horns;
"Light on his back the ſportive damſel bounds,
"And pleaſed he moves along the flowery grounds;
"Bears with ſlow ſtep his beauteous prize aloof,
"Dips in the lucid flood his ivory hoof;
"Then wets his velvet knees, and wading laves
"His ſilky ſides, amid the dimpling waves.
"While her fond train with beckoning hands de-
"plore,
"Strain their blue eyes, and ſhriek along the ſhore,
"Beneath her robe ſhe draws her ſnowy feet,
"And, half reclining on her ermine ſeat,
"Round his raiſed neck her radiant arms ſhe throws,
"And reſts her fair cheek on his curled brows;
"Her yellow treſſes wave on wanton gales,
"And high in air her azure mantle ſails*."

* Darwin. V. Botanic Garden.

CHAPTER XIV.

ON GEOGRAPHY AND CHRONOLOGY.

THE uſual manner of teaching Geography and Chronology may, perhaps, be neceſſary in public ſeminaries, where a number of boys are to learn the ſame thing at the ſame time; but what is learned in this manner is not permanent; ſomething beſides merely committing names and dates to the memory is requiſite to make a uſeful impreſſion upon the memory. For the truth of this obſervation an appeal is made to the reader. Let him recollect whether the Geography and Chronology which he learned, whilſt a boy, are what he now remembers? Whether he has not obtained his preſent knowledge from other

ſources than the taſks of early years? When buſineſs, or converſation, calls upon us to furniſh facts accurate as to place and time, we retrace our former heterogeneous acquirements, and ſelect thoſe circumſtances which are connected with our preſent purſuit, and thus we form, as it were, a nucleus round which other facts inſenſibly arrange themſelves. Perhaps no two men in the world, who are well verſed in theſe ſtudies, connect their knowledge in the ſame manner. Relation to ſome particular country, ſome favourite hiſtory, ſome diſtinguiſhed perſon, forms the connexion which guides our recollection, and which arranges our increaſing nomenclature. By attending to what paſſes in our own minds, we may learn an effectual method of teaching without pain, and without any extraordinary burthen to the memory, all that is uſeful of theſe ſciences. The details of hiſtory ſhould be marked by a few chronological eras, and by a few general ideas of geography. When theſe have been once completely aſſociated in the mind, there is little danger of their being ever diſunited;

the ſight of any country will recall its hiſtory, and even from repreſentations in a map, or on the globe, when the mind is wakened by any recent event, a long train of concomitant ideas will recur.

The uſe of technical helps to the memory has been condemned by many, and certainly, when they are employed as artifices to ſupply the place of real knowledge, they are contemptible; but when they are uſed as indexes to facts that have been really collected in the mind; when they ſerve to arrange the materials of knowledge in appropriate claſſes, and to give a ſure and rapid clue to recollection, they are of real advantage to the underſtanding. Indeed, they are now ſo common, that pretenders cannot build the ſlighteſt reputation upon their foundation.

Ample materials are furniſhed in Gray's Memoria Technica, from which a ſhort and uſeful ſelection may be made, according to the purpoſes which are in view. For children the little ballad of the Chapter of Kings will not be found beneath the notice of mothers who attend

to education. If the technical terminations of Gray are inſerted, they will never be forgotten, or may be eaſily recalled *. We ſcarcely ever forget a ballad if the tune be popular.

For pupils at a more advanced age it will be found advantageous to employ technical helps of a more ſcientific conſtruction. Prieſtley's Chart of Biography may, from time to time, be hung in their view. Smaller charts, upon the ſame plan, might be provided with a few names as landmarks; theſe may be filled up by the pupil with ſuch names as he ſelects from hiſtory; they may be bound in octavo, like maps, by the middle, ſo as to unfold both ways. Prints, maps, and medals, when they are part of the conſtant furniture of a room, are ſeldom attended to by young people; but

* Inſtead of

William the Conqueror long did reign,
And William his ſon by an arrow was ſlain,

Read

William the Con*ſax* long did reign,
And Ruf*koi* his ſon by an arrow was ſlain.

And ſo on from Gray's Memoria Technica to the end of the chapter.

when circumſtances excite an intereſt upon a particular ſubject, then is the moment to produce the ſymbols which record and communicate knowledge.

Mrs. Radcliffe, in her judicious and picturesque Tour through Germany, tells us, that in paſſing through the apartments of a palace which the archduchefs Maria Chriſtina, the ſiſter of the late unfortunate queen of France, had left a few hours before, ſhe ſaw ſpread upon a table a map of all the countries then included in the ſeat of the war. The poſitions of the ſeveral corps of the allied armies were marked upon this chart with ſmall pieces of various coloured wax. Can it be doubted, that the ſtrong intereſt which this princeſs muſt have taken in the ſubject would for ever impreſs upon her memory the geography of this part of the world?

How many people are there who have become geographers ſince the beginning of the preſent war? Even the common newſpapers diſſeminate this ſpecies of knowledge, and thoſe who ſcarcely knew the ſituation of Breſt har-

bour a few years ago, have conſulted the map with that eagerneſs which approaching danger excites; they conſequently will tenaciouſly remember all the geopraphical knowledge they have thus acquired. The art of creating an intereſt in the ſtudy of geography depends upon the dexterity with which paſſing circumſtances are ſeized by a preceptor in converſation. What are maps or medals, ſtatues or pictures, but technical helps to memory? If a mother poſſeſs good prints, or caſts of ancient gems, let them be ſhewn to any perſons of taſte and knowledge who viſit her; their attention leads that of our pupils; imitation and ſympathy are the parents of taſte, and taſte reads in the monuments of art whatever hiſtory has recorded.

In the Adele and Théodore of Madame de Silleri a number of adventitious helps are deſcribed for teaching hiſtory and chronology. There can be no doubt that theſe are uſeful; and although ſuch an apparatus cannot be procured by private families, fortunately the print-ſhops of every provincial town, and of the capital in particular, furniſh even to the paſſenger

a continual ſucceſſion of inſtruction. Might not prints aſſorted for the purpoſes which we have mentioned be *lent* at circulating libraries?

To aſſiſt our pupils in geography, we prefer a globe to common maps. Might not a cheap, portable, and convenient globe, be made of oiled ſilk, to be inflated by a common pair of bellows? Mathematical exactneſs is not requiſite for our purpoſe, and though we could not pretend to the preciſion of our beſt globes, yet a balloon of this ſort would compenſate by its ſize and convenience for its inaccuracy. It might be hung by a line from its north pole, to a hook ſcrewed into the architrave of a door or window; and another ſtring from its ſouth pole might be faſtened at a proper angle to the floor, to give the requiſite elevation to the axis of the globe. An idea of the different projections of the ſphere may be eaſily acquired from this globe in its flaccid ſtate, and any part of it might be conſulted as a map if it were laid upon a convex board of a convenient ſize. Impreſſions from the plates which are uſed for common globes, might be taken to try this idea without

any great trouble or expence; but we wiſh to employ a much larger ſcale, and to have them five or ſix feet diameter. The inſide of a globe of this ſort might be eaſily illuminated, and this would add much to the novelty and beauty of its appearance.

In the country, with the aſſiſtance of a common carpenter and plaiſterer, a large globe of lath and plaiſter may be made for the inſtruction and entertainment of a numerous family of children. Upon this they ſhould leiſurely delineate from time to time, by their given latitudes and longitudes, ſuch places as they become acquainted with in reading or converſation. The capital city, for inſtance, of the different countries of Europe, the rivers, and the neighbouring towns, till at laſt the outline might be added: for the ſake of convenience, the lines, &c. may be firſt delineated upon a piece of paper, from which they may be accurately transferred to their proper places on the globe by the intervention of black-leaded paper, or by pricking the lines through the paper, and

pouncing powdered blue through the holes upon the ſurface of the globe.

We enter into this detail, becauſe we are convinced, that every addition to the active manual employment of children is of conſequence, not only to their improvement, but to their happineſs.

Another invention has occurred to us for teaching geography and hiſtory together. Prieſtley's Chart of Hiſtory, though conſtructed with great ingenuity, does not invite the attention of young people: there is an intricacy in the detail which is not obvious at firſt. To remedy, what appears to us a difficulty, we propoſe that eight and twenty, or perhaps thirty, octavo maps of the globe ſhould be engraved; upon theſe ſhould be traced, in ſucceſſion, the different ſituation of the different countries of the world, as to power and extent, during each reſpective century: different colours might denote the principal diviſions of the world in each of theſe maps; the ſame colour always denoting the ſame country, with the addition of one ſtrong colour; red, for inſtance, to diſtinguiſh

that country which had at each period the principal dominion. On the upper and lower margin in theſe maps, the names of illuſtrious perſons might be engraven in the manner of the biographical chart; and the reigning opinions of each century ſhould alſo be inſerted. Thus hiſtory, chronology, and geography, would appear at once to the eye in their proper order, and regular ſucceſſion, divided into centuries and periods, which eaſily occur to recollection.

We forbear to expatiate upon this ſubject, as it has not been actually ſubmitted to experiment; carefully avoiding in the whole of this work to recommend any mode of inſtruction which we have not actually put in practice. For this reaſon, we have not ſpoken of the Abbé Gaultier's method of teaching geography, as we have been able to obtain accounts of it only from the public papers, and from reviews: we are, however, diſpoſed to think favourably beforehand, of any mode which unites amuſement with inſtruction. We cannot forbear recommending, in the ſtrongeſt manner, a few

pages of Rollin in his "Thoughts upon Education*," which we think contain an excellent ſpecimen of the manner in which a well informed preceptor might lead his pupils a geographical, hiſtorical, botanical, and phyſiological tour upon the artificial globe.

We conclude this chapter of hints, by repeating what we have before aſſerted, that though technical aſſiſtance may be of ready uſe to thoſe who are really acquainted with that knowledge to which it refers, it never can ſupply the place of accurate information.

The cauſes of the riſe and fall of empires, the progreſs of human knowledge, and the great diſcoveries of ſuperior minds, are the real links which connect the chain of political knowledge.

* Page 24.

CHAPTER XV.

ON ARITHMETICK.

THE man who is ignorant that two and two make four is ſtigmatized with the character of hopeleſs ſtupidity; except, as Swift has remarked, in the arithmetick of the cuſtoms, where two and two do not always make the ſame ſum.

We muſt not judge of the underſtanding of a child by this teſt, for many children of quick abilities do not immediately aſſent to this propoſition when it is firſt laid before them. "Two "and two make four," ſays the tutor. "Well, "child, why do you ſtare ſo?"

The child ſtares becauſe the word *make* is in this ſentence uſed in a ſenſe which is quite new

to him; he knows what it is to make a bow, and to make a noiſe, but how this active verb is applicable in the preſent caſe, where there is no agent to perform the action, he cannot clearly comprehend. "Two and two *are* "four," is more intelligible; but even this aſſertion the child, for want of a diſtinct notion of the ſenſe in which the word *are* is uſed, does not underſtand. "Two and two *are called* four," is, perhaps, the moſt accurate phraſe a tutor can uſe; but even theſe words will convey no meaning until they have been aſſociated with the pupil's perceptions. When he has once perceived the combination of the numbers with real objects, it will then be eaſy to teach him that the words *are called*, *are*, and *make*, in the foregoing propoſition, are ſynonimous terms.

We have choſen the firſt ſimple inſtance we could recollect, to ſhew how difficult the words we generally uſe in teaching arithmetick muſt be to our young pupils. It would be an unprofitable taſk to enumerate all the puzzling technical terms which, in their earlieſt leſſons,

children are obliged to hear, without being able to underſtand.

It is not from want of capacity that ſo many children are deficient in arithmetical ſkill, and it is abſurd to ſay "ſuch a child has no genius "for arithmetick. Such a child cannot be "made to comprehend any thing about num-"bers." Theſe aſſertions prove nothing, but that the perſons who make them are ignorant of the art of teaching. A child's ſeeming ſtupidity in learning arithmetick may, perhaps, be a proof of intelligence and good ſenſe. It is eaſy to make a boy, who does not reaſon, repeat by rote any technical rules which a common writing-maſter, with magiſterial ſolemnity, may lay down for him; but a child who reaſons will not be thus eaſily managed; he ſtops, frowns, heſitates, queſtions his maſter, is wretched and refractory, until he can diſcover why he is to proceed in ſuch and ſuch a manner; he is not content with ſeeing his preceptor make figures and lines upon a ſlate, and perform wondrous operations with the ſelf-complacent dexterity of a conjurer. A ſenſible

boy is not ſatisfied with merely ſeeing the total of a given ſum, or the anſwer to a given queſtion, *come out right*, he inſiſts upon knowing why it is right. He is not content to be led to the treaſures of ſcience blindfold; he would tear the bandage from his eyes, that he might know the way to them again.

That many children, who have been thought to be ſlow in learning arithmetick, have, after their eſcape from the hands of pedagogues, become remarkable for their quickneſs, is a fact ſufficiently proved by experience. We ſhall mention only one inſtance, which we happened to meet with whilſt we were writing this chapter. John Ludwig, a Saxon peaſant, was diſmiſſed from ſchool when he was a child, after four years ineffectual ſtruggle to learn the common rules of arithmetick. He had been, during this time, beaten and ſcolded in vain. He ſpent ſeveral ſubſequent years in common country labour, but at length ſome accidental circumſtances excited his ambition, and he became expert in all the common rules, and maſtered the rule of three and fractions, by the

help of an old ſchool-book, in the courſe of one year. He afterwards taught himſelf geometry, and raiſed himſelf, by the force of his abilities and perſeverance, from obſcurity to fame. We ſhould like to ſee the book which helped Mr. Ludwig to conquer his difficulties.

Introductions to Arithmetick are, often, calculated rather for adepts in ſcience, than for the ignorant. We do not pretend to have diſcovered any ſhorter method than what is common of teaching theſe ſciences, but in conformity with the principles which are laid down in the former part of this work, we have endeavoured to teach their rudiments without diſguſting our pupils, and without habituating them to be contented with operations which are merely technical.

In arithmetick, as in every other branch of education, the principal object ſhould be to preſerve the underſtanding from implicit belief; to invigorate its powers; to aſſociate pleaſure with literature, and to induce the laudable ambition of progreſſive improvement.

As ſoon as a child can read, he ſhould be ac-

cuſtomed to count; and to have the names of numbers early connected in his mind with the combinations which they repreſent. For this purpoſe he ſhould be taught to add firſt by things, and afterwards by ſigns or figures. He ſhould be taught to form combinations of things by adding them together one after another. At the ſame time that he acquires the names that have been given to theſe combinations, he ſhould be taught the figures or ſymbols that repreſent them. For example, when it is familiar to the child that one almond, and one almond, are called two almonds; that one almond, and two almonds, are called three almonds, and ſo on, he ſhould be taught to diſtinguiſh the figures that repreſent theſe aſſemblages; that 3 means one and two, &c. Each operation of arithmetick ſhould proceed in this manner from individuals to the abſtract notation of ſigns.

One of the earlieſt operations of the reaſoning faculty is abſtraction; that is to ſay, the power of claſſing a number of individuals under one name. Young children call ſtrangers either

men or women; even the moſt ignorant ſavages * have a propenſity to generaliſe.

We may err either by accuſtoming our pupils too much to the conſideration of tangible ſubſtances when we teach them arithmetick, or by turning their attention too much to ſigns. The art of forming a ſound and active underſtanding conſiſts in the due mixture of facts and reflection. Dr. Reid has in his "Eſſay on the Intellectual "Powers of Man," page 297, pointed out, with great ingenuity, the admirable œconomy of nature in limiting the powers of reaſoning during the firſt years of infancy. This is the ſeaſon for cultivating the ſenſes, and whoever, at this early age endeavours to force the tender ſhoots of reaſon, will repent his raſhneſs.

In the chapter "on Toys" we have recommended the uſe of plain regular ſolids, cubes, globes, &c. made of wood, as playthings for children, inſtead of uncouth figures of men, women and animals. For teaching arithmetick half inch cubes, which can be eaſily graſped by

* V. A ſtrange inſtance quoted by Mr. Stewart, "On the Human Mind," p. 152.

infant fingers, may be employed with great advantage; they can be readily arranged in various combinations; the eye can eaſily take in a ſufficient number of them at once, and the mind is inſenſibly led to conſider the aſſemblages in which they may be grouped, not only as they relate to number, but as they relate to quantity or ſhape; beſides, the terms which are borrowed from ſome of theſe ſhapes, as ſquares, cubes, &c. will become familiar. As theſe children advance in arithmetick, to ſquare or cube a number will be more intelligible to them than to a perſon who has been taught theſe words merely as the formula of certain rules. In arithmetick the firſt leſſons ſhould be ſhort and ſimple; two cubes placed *above* each other, will ſoon be called two; if placed in any other ſituations near each other, they will ſtill be called two; but it is advantageous to accuſtom our little pupils to place the cubes with which they are taught in ſucceſſion, either by placing them upon one another, or lying in columns upon a table, beginning to count from the cube next to them, as we caſt up in addi-

tion. For this purpoſe a board about ſix inches long, and five broad, divided into columns perpendicularly by ſlips of wood three eighths of an inch wide, and one eighth of an inch thick, will be found uſeful; and if a few cubes of colours *different from thoſe already mentioned*, with numbers on their ſix ſides, are procured, they may be of great ſervice. Our cubes ſhould be placed, from time to time, in a different order, or promiſcuouſly; but when any arithmetical operations are to be performed with them, it is beſt to preſerve the eſtabliſhed arrangement.

One cube and one other are called two.

Two what?

Two cubes.

One glaſs, and one glaſs, are called two glaſſes. One raiſin, and one raiſin, are called two raiſins, &c. One cube, and one glaſs, are called what? *Two things*, or two.

By a proceſs of this ſort the meaning of the abſtract term *two* may be taught. A child will perceive that the word *two* means the ſame as the words *one and one*; and when we

ſay that one and one are called two, unleſs he is prejudiced by ſomething elſe that is ſaid to him, he will underſtand nothing more than that there are two names for the ſame thing.

" One, and one, and one, are called three," is the ſame as ſaying " that three is the name for " one, and one, and one." " Two and one " are three," is alſo the ſame as ſaying " that " three is the name of *two and one*." Three is alſo the name of one and two; the word three has, therefore, three meanings; it means one, and one, and one; *alſo* two and one: alſo one and two. He will ſee that any two of the cubes may be put together, as it were, in one parcel, and that this parcel may be called *two*; and he will alſo ſee that this parcel, when joined to another ſingle cube, will *make* three, and that the ſum will be the ſame, whether the ſingle cube, or the two cubes, be named firſt.

In a ſimilar manner the combinations which form *four* may be conſidered. One, and one, and one, and one, are four.

One and three are four.

Two and two are four.

Three and one are four.

All theſe aſſertions mean the ſame thing, and the term *four* is equally applicable to each of them; when therefore, we ſay that two and two are four, the child may be eaſily led to perceive, and indeed to *ſee*, that it means the ſame thing to ſaying one *two*—and one *two*,—which is the ſame thing as ſaying two *two's*, or ſaying the word *two* two times. Our pupil ſhould be ſuffered to reſt here, and we ſhould not, at preſent, attempt to lead him farther towards that compendious method of addition which we call multiplication; but the foundation is laid by giving him this view of the relation between two and two in forming four.

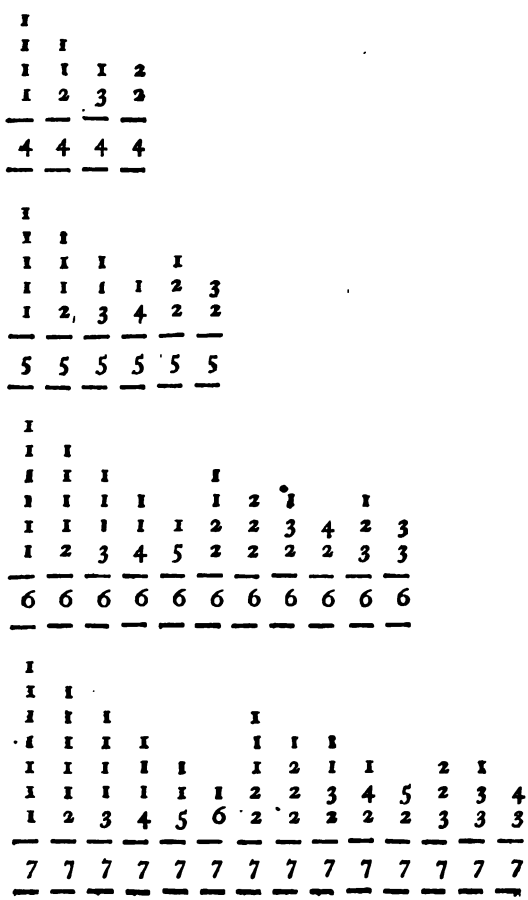
There is an enumeration in the note * of the different combinations which compoſe the reſt

* Two is the name for

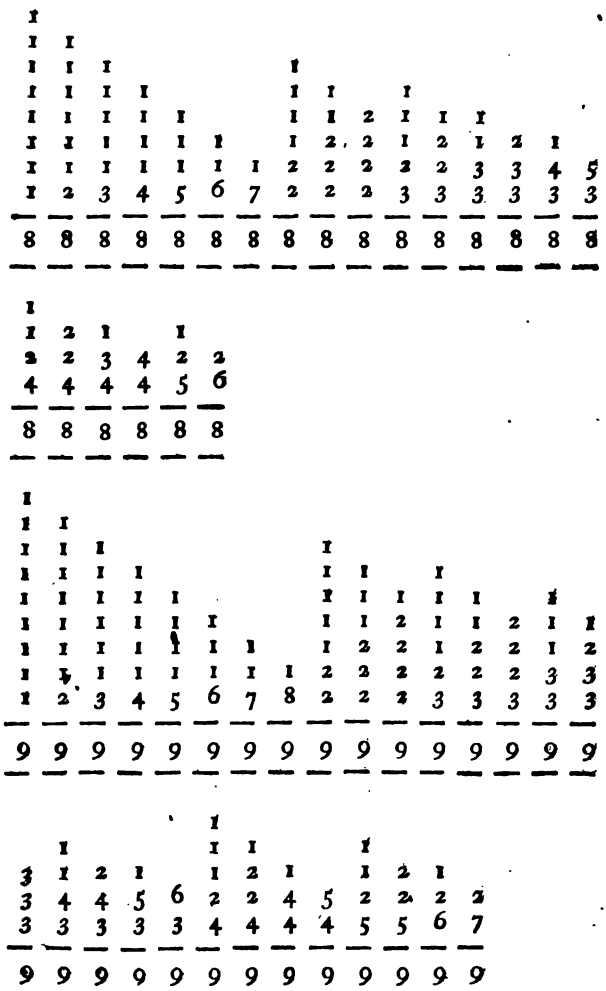
1
1
—
2

1
1 1
1 2
— —
3 3
— —

of the arabic notation, which conſiſts of only nine characters. They may be employed as the firſt ſums for teaching addition.



Before we proceed to the number ten, or to the new ſeries of numeration which ſucceeds to


1 1 1

it, we ſhould make our pupils perfectly maſters of the combinations which we have mentioned, both in the direct order in which they are arranged, and in various modes of ſucceſſion; by theſe means not only the addition, but the ſubtraction of numbers as far as nine, will be perfectly familiar to them.

It has been obſerved before, that counting by realities, and by ſigns, ſhould be taught at the ſame time, ſo that the ear, the eye, and the mind, ſhould keep pace with one another, and that technical habits ſhould be acquired without injury to the underſtanding. If a child begins between four and five years of age, he may be allowed half a year for this eſſential preliminary ſtep in arithmetick; four or five minutes application every day will be ſufficient to teach him not only the relations of the firſt decade in numeration, but alſo how to write figures with accuracy and expedition.

The next ſtep is by far the moſt difficult in the ſcience of arithmetick; in treatiſes upon the ſubject it is conciſely paſſed over under the title Numeration, but it requires no ſmall de-

gree of care to make it intelligible to children, and we therefore recommend, that, beſides direct inſtruction upon the ſubject, the child ſhould be led, by degrees, to underſtand the nature of claſſification in general. Botany and natural hiſtory, though they are not purſued as ſciences, are, notwithſtanding, the daily occupation and amuſement of children, and they ſupply conſtant examples of claſſification. In converſation theſe may be familiarly pointed out; a grove, a flock, &c. are conſtantly before the eyes of our pupil, and he comprehends as well as we do what is meant by two groves, two flocks, &c. The trees that form the grove are each of them individuals, but let their numbers be what they may when they are conſidered as a grove, the grove is but one, and may be thought of and ſpoken of diſtinctly, without any relation to the number of ſingle trees which it contains. From theſe, and ſimilar obſervations, a child may be led to conſider *ten* as the name for a *whole*, an *integer*; a *one*, which may be repreſented by the figure (1); this ſame figure may alſo ſtand for a hundred,

or a thouſand, as he will readily perceive hereafter. Indeed, the term one hundred will become familiar to him in converſation long before he comprehends that the word *ten* is uſed as an aggregate term, like a dozen, or a thouſand. We do not uſe the word ten as the French do *une dizaine*; ten does not, therefore, preſent the idea of an integer till we learn arithmetick. This is a defect in our language, which has ariſen from the uſe of duodecimal numeration; the analogies exiſting between the names of other numbers in progreſſion is broken by the terms eleven and twelve. *Thirteen, fourteen*, &c. are ſo obviouſly compounded of three and ten, and four and ten, as to ſtrike the ears of children immediately, and when they advance as far as twenty, they readily perceive that a new ſeries of units begins, and proceeds to thirty, and that thirty, forty, &c. mean three tens, four tens, &c. In pointing out theſe analogies to children, they become intereſted and attentive, they ſhew that ſpecies of pleaſure which ariſes from the perception of *aptitude*, or of truth. It can ſcarcely

be denied that ſuch a pleaſure exiſts independently of every view of utility and fame, and when we can once excite this feeling in the minds of our young pupils at any period of their education, we may be certain of ſucceſs.

As ſoon as diſtinct notions have been acquired of the manner in which a collection of ten units becomes a new unit of a higher order, our pupil may be led to obſerve the utility of this invention by various examples, before he applies it to the rules of arithmetick. Let him count as far as ten with black pebbles*, for inſtance; let him lay aſide a white pebble to repreſent the collection of ten; he may count another ſeries of ten black pebbles, and lay aſide another white one; and ſo on, till he has collected ten white pebbles; as *each* of the ten white pebbles repreſents ten black pebbles, he will have counted one hundred; and the ten white pebbles may now be repreſented by a ſingle red one, which will ſtand for one hundred. This large number, which it takes up ſo much

* The word calculate is derived from the Latin calculus, a pebble.

time to count, and which could not be comprehended at one view, is represented by a single sign. Here the difference of colour forms the distinction: difference in shape, or size, would answer the same purpose, as in the Roman notation X for ten, L for fifty, C for one hundred, &c. All this is fully within the comprehension of a child of six years old, and will lead him to the value of written figures by the *place* which they hold when compared with one another. Indeed he may be led to invent this arrangement, a circumstance which would encourage him in every part of his education. When once he clearly comprehends that the third place, counting from the right, contains only figures which represent hundreds, &c. he will have conquered one of the greatest difficulties of arithmetick. If a paper ruled with several perpendicular lines, a quarter of an inch asunder, be shewn to him, he will see that the spaces or columns between these lines would distinguish the value of figures written in them, without the use of the sign (0), and he will see

that (0), or zero, ſerves only to mark the place or ſituation of the neighbouring figures.

An idea of decimal arithmetick, but without detail, may now be given to him, as it will not appear extraordinary to *him* that a unit ſhould repreſent ten by having its place, or column changed; and nothing more is neceſſary in decimal arithmetick than to conſider that figure which repreſented, at one time, an integer, or whole, as repreſenting at another time the number of *tenth parts* into which that whole may have been broken.

Our pupil may next be taught what is called numeration, which he cannot fail to underſtand, and in which he ſhould be frequently exerciſed. Common addition will be eaſily underſtood by a child who diſtinctly perceives that the perpendicular columns, or places in which figures are written, may diſtinguiſh their value under various different denominations, as gallons, furlongs, ſhillings, &c. We ſhould not teaſe children with long ſums in avoirdupois weight, or load their frail memories with tables of long-meaſure, and dry-meaſure, and ale-mea-

ſure in the country, and ale-meaſure in London; only let them caſt up a few ſums in different denominations, with the tables before them, and let the practice of addition be preſerved in their minds by ſhort ſums every day, and when they are between ſix and ſeven years old they will be ſufficiently maſters of the firſt and moſt uſeful rule of arithmetick.

To children who have been trained in this manner ſubtraction will be quite eaſy; care, however, ſhould be taken to give them a clear notion of the myſtery of *borrowing* and *paying*, which is inculcated in teaching ſubtraction.

From	94
Subtract	46

"Six from four I can't, but ſix from ten, and "four remains; and four and four *is* eight."

And then, "One that I borrowed and four "are five, five from nine, and four remain."

This is the formula; but is it ever explained? or can it? Certainly not without ſome alteration. A child ſees that ſix cannot be ſubtracted (taken) from four; more eſpecially a child who is familiarly acquainted with the

component parts of the names ſix and four: he ſees that the ſum 46 is leſs than the ſum 94, and he knows that the leſſer ſum may be ſubtracted from the greater; but he does not perceive the means of ſeparating them figure by figure. Tell him, that though ſix cannot be deducted from four, yet it can from fourteen, and that if one of the tens which are contained in the (9) ninety in the uppermoſt row of the ſecond column be ſuppoſed to be taken away, or borrowed, from the ninety, and added to the four, the nine will be reduced to 8 (eighty), and the four will become fourteen. *Our* pupil will comprehend this moſt readily; he will ſee that 6, which could not be ſubtracted from 4, may be ſubtracted from fourteen, and he will remember that the 9 in the next column is to be conſidered as only (8). To avoid confuſion, he may draw a ſtroke acroſs the (9) and write 8 over * it ($\overset{8}{9}$) and proceed to the remainder of the operation. This method for beginners is certainly very diſtinct, and may, for ſome time, be em-

* This method is recommended in the Cours de Math. par Camus, p. 38.

ployed with advantage; and after its rationale has become familiar, we may explain the common method, which depends upon this conſideration.

"When one number is deducted from ano-
"ther, the remainder will be the ſame, whether
"we add number to the ſmaller or take away
"the ſame number from the larger." For inſtance:

Let the larger number be nine, and the ſmaller four—the remainder will be the ſame whether we add three to the ſmaller number (4), or take away three from the larger number (9); in both caſes the remainder will be two.

Now in the common method of ſubtraction the *one* which is borrowed is taken from the uppermoſt figure in the adjoining column, and inſtead of altering that figure to *one* leſs, we add one to the loweſt figure, which, as we have juſt ſhewn, will have the ſame effect. The terms, however, that are commonly uſed in performing this operation, are improper. To ſay "one
"that I borrowed, and four" (meaning the loweſt figure in the adjoining column), implies the

dea that what was borrowed is now to be repaid to that loweſt figure, which is not the fact.

As to multiplication, we have little to ſay. Our pupil ſhould be furniſhed, in the firſt inſtance, with a table containing the addition of the different units, which form the different products of the multiplication table: theſe he ſhould, from time to time, add up as an exerciſe in addition; and it ſhould be frequently pointed out to him, that adding theſe figures ſo many times over is the ſame as multiplying them by the number of times that they are added; as three times 3 means 3 added three times. Here one of the figures repreſents a quantity, the other does not repreſent a quantity, it denotes nothing but the times, or frequency of repetition. Young people, as they advance, are apt to confound theſe ſigns, and to imagine, for inſtance, in the rule of three, &c. that the ſums which they multiply together mean quantities; that 40 yards of linen may be multipled by three and ſixpence, &c. an idea from which the miſtatements in ſums that are intricate frequen ariſe.

We have heard that the multiplication table has been ſet, like the Chapter of Kings, to a cheerful tune. This is a ſpecies of technical memory which we have long practiſed, and which can do no harm to the underſtanding; it prevents the mind from no beneficial exertion, and may ſave much irkſome labour. It is certainly to be wiſhed that our pupil ſhould be expert in the multiplication table; if the cubes which we have formerly mentioned be employed for this purpoſe, the notion of *ſquaring* figures will be introduced at the ſame time that the multiplication table is committed to memory.

In diviſion what is called the Italian method of arranging the diviſor and quotient appears to be preferable to the common one, as it places them in ſuch a manner as to be eaſily multiplied by each other, and as it agrees with algebraic notation.

The uſual method is this:

Diviſor

71)83467(1175

Italian method:

Dividend	
83467	71
	1175

The rule of three is commonly taught in a manner merely technical: that it may be learned in this manner, ſo as to anſwer the common purpoſes of life, there can be no doubt; and nothing is farther from our deſign than to depreciate any mode of inſtruction which has been ſanctioned by experience: but our purpoſe is to point out methods of conveying inſtruction that ſhall improve the reaſoning faculty, and habituate our pupil to think upon every ſubject. We wiſh, therefore, to point out the courſe which the mind would follow to ſolve problems relative to proportion without the rule, and to turn our pupil's attention to the circumſtances in which the rule aſſiſts us.

The calculation of the price of any commodity, or the meaſure of any quantity, where the firſt term is one, may be always ſtated as a ſum in the rule of three; but as this ſtatement re-

tards, inſtead of expediting the operation, it is never practiſed.

If one yard coſts a ſhilling, how much will three yards coſt?

The mind immediately perceives that the price added three times together, or multiplied by three, gives the anſwer. If a certain number of apples are to be equally diſtributed amongſt a certain number of boys, if the ſhare of one is one apple, the ſhare of ten or twenty is plainly equal to ten or twenty apples. But if we ſtate that the ſhare of three boys is twelve apples, and aſk what number will be ſufficient for nine boys, the anſwer is not obvious, it requires conſideration. Aſk our pupil what made it ſo eaſy to anſwer the laſt queſtion, he will readily ſay, "Becauſe I knew what was the "ſhare of one."

Then you could anſwer this new queſtion if you knew the ſhare of one boy.

Yes.

Cannot you find out what the ſhare of one boy is when the ſhare of three boys is twelve.

Four.

What number of apples then will be enough, at the ſame rate, for nine boys?

Nine times four, that is thirty-ſix.

In this proceſs he does nothing more than divide the ſecond number by the firſt, and multiply the quotient by the third, 12 divided by 3 is 4, which multiplied by 9 is 36. And this is, in truth, the foundation of the rule; for though the golden rule facilitates calculation, and contributes admirably to our convenience, it is not abſolutely neceſſary to the ſolution of queſtions relating to proportion.

Again, "If the ſhare of three boys is five "apples, how many will be ſufficient for nine?"

Our pupil will attempt to proceed as in the former queſtion, and will begin by endeavouring to find out the ſhare of one of the three boys; but this is not quite ſo eaſy; he will ſee that each is to have one apple, and part of another; but it will coſt him ſome pains to determine exactly how much. When at length he finds that one and two thirds is the ſhare of one boy, before he can anſwer the queſtion he muſt multiply one and two thirds by nine, which is

an operation *in fractions*, a rule of which he at preſent knows nothing. But if he begins by multiplying the ſecond by the third, inſtead of dividing the ſecond previouſly by the firſt number, he will avoid the embarraſſment occaſioned by fractional parts, and will eaſily ſolve the queſtion. Three is to five as nine is to fifteen.

3 : 5 :: 9 : 15

Multiply 5
by 9

it makes 45

which product 45, divided by 3, gives 15.

Here our pupil perceives, that if a given number, 12, for inſtance, is to be divided by one number, and multiplied by another, *it will come to the ſame thing*, whether he begins by dividing the given number, or by multiplying it.

12 divided by 4 is 3, which
multiplied by 6 is 18,
And
12 multiplied by 6 is 72, which
divided by 4 is 18.

We recommend it to preceptors not to fa-

tigue the memories of their young pupils with ſums which are difficult only from the number of figures which they require, but rather to give examples *in practice*, where aliquot parts are to be conſidered, and where their ingenuity may be employed without exhauſting their patience. A variety of arithmetical queſtions occur in common converſation, and from common incidents; theſe ſhould be made a ſubject of inquiry, and our pupils, amongſt others, ſhould try their ſkill. "Butler's Arithmetical Queſ-" tions" will ſupply many entertaining as well as inſtructive queſtions.

We ſhould obſerve, that every explanation upon theſe ſubjects ſhould be recurred to from time to time, perhaps every two or three months; as there are no circumſtances in the buſineſs of every day which recall abſtract ſpeculations to the minds of children; and the pupil who underſtands them to-day, may, without any deficiency of memory, forget them entirely in a few weeks. Indeed, the perception of the chain of reaſoning, which connects demonſtration, is what makes it truly advan-

geous in education. Whoever has occaſion, in the buſineſs of life, to make uſe of the rule of three, may learn it effectually in a month as well as in ten years; but the habit of reaſoning cannot be acquired late in life without *unuſual* labour, and uncommon fortitude.

CHAPTER XVI.

GEOMETRY.

THERE is certainly no royal road to Geometry, but the way may be rendered eaſy and pleaſant by timely preparations for the journey. Without any previous knowledge of the country, or of its peculiar language, how can we expect that our young traveller ſhould advance with facility or pleaſure. We are anxious that our pupil ſhould acquire a taſte for accurate reaſoning, and we reſort to Geometry, as the moſt perfect, and the pureſt ſeries of ratiocination which has been invented. Let us, then, ſedulouſly avoid whatever may diſguſt him; let his firſt ſteps be eaſy, and ſucceſsful; let them

be frequently repeated till he can retrace them without a guide.

We have recommended in the chapter upon Toys, that children ſhould, from their earlieſt years, be accuſtomed to the ſhape of what are commonly called the regular ſolids; they ſhould alſo be accuſtomed to the figures in mathemacal diagrams. To theſe ſhould be added their reſpective names, and the whole language of the ſcience ſhould be rendered as familiar as poſſible.

Mr. Donne, an ingenious mathematician of Briſtol, has publiſhed a proſpectus of an Eſſay on Mechanical Geometry: he has executed, and employed with ſucceſs, models in wood and metal for demonſtrating propoſitions in geometry in a *palpable* manner. We have endeavoured, in vain, to procure a ſet of theſe models for our own pupils, but we have no doubt of their utility*.

What has been thus acquired in childhood

* Since the firſt edition of this work was publiſhed we have ſeen Mr. Donne's Models, which are deſigned with much ingenuity, and executed with great accuracy.

ſhould not be ſuffered to eſcape the memory. Dionyſius * had mathematical diagrams deſcribed upon the floors of his apartments, and thus recalled their demonſtrations to his memory. The ſlighteſt addition in knowledge that can be conceived, if it be continued daily, will imperceptibly not only preſerve what has been already acquired, but will, in a few years, amount to as large a ſtock of mathematical knowledge as we could wiſh. It is not our object to make mathematicians, but to make it eaſy to our pupil to become a mathematician, if his intereſt, or his ambition, make it deſirable; and, above all, to habituate him to clear reaſoning, and cloſe attention. And we may here remark, that an early acquaintance with the accuracy of mathematical demonſtration does not, within our experience, contract the powers of the imagination. On the contrary, amongſt other inſtances, we recollect that of a young lady, who is now no more, who had an uncommon propenſity to mathematical reaſoning, though her imagination was remarkably

* Plutarch.—Life of Dion.

vivid and inventive. The following ſtory was written entirely by her when ſhe was only twelve years old.

" It happened towards the middle of June " that I roſe remarkably early to take a walk " through the country, before the ſultry beams " of the ſun had yet heated the atmoſphere, " and wandering wherever the windings of the " path led me, I arrived at the gate of a mag- " nificent garden: the gardener immediately " perceiving me deſired that I ſhould walk in, " with which requeſt I readily complied, and " ſurveyed with delight the variety of ſhrubs, " and flowers, which the garden produced: at " length repoſing myſelf among the twiſting " branches of an honeyſuckle, within full view " of a large and coſtly bed of tulips, Morpheus " cloſed my eyes, and ſent to me from heaven " the following dream.—"

" On the talleſt, largeſt, fineſt tulip that " bloomed in the garden, methought there ſet- " tled a butterfly of uncommon beauty, be- " tween whoſe downy wings reclined a little " fairy. Her form was inexpreſſibly elegant;

" ſweetneſs, and gaiety, and youth were blend-
" ed in her countenance, with innocence and
" unaffected grace, that ſhe ſeemed as if ſhe
" were that moment come to life: her flowing
" robe was tinctured with all the variety of co-
" lors that it was poſſible for nature or art to
" conceive; her eyes were of a vivid blue, and
" her flaxen hair waved in ringlets upon her
" ſhoulders. Small though ſhe was, I could
" diſtinguiſh every fold in her garment, nay
" even every azure vein that wandered beneath
" her ſnowy ſkin. As I was thus contemplat-
" ing her with attention ſhe diſengaged herſelf
" from the butterfly whom ſhe managed with a
" ſilken rein, leaving it to range about the gar-
" den at pleaſure, and perching herſelf upon
" the ſtamina of the tulip, ſhe began to diver-
" ſify it with the very fineſt tinctures that I could
" have formed any idea of. She placed in her
" lap a little tablet covered with a numberleſs
" variety of different colors, which ſhe by de-
" grees laid on the ſurface of the flower with a
" pencil made of the ſofteſt hairs imaginable,
" wetting it every now and then with the dew-

" drops that ſtill remained ſcattered up and
" down the leaves. Methought as I gazed
" upon her that I never in my life beheld a
" more beautiful picture. And now that her
" morning work was juſt completed ſhe gather-
" ed together an handful of farina off a neigh-
" bouring flower, and began to ſprinkle it over
" the yet moiſt tulip, to give it that velvet gloſs
" which is ſo peculiarly beautiful, when I hap-
" pened to turn my head, and to my great ſur-
" priſe I beheld my youngeſt daughter running
" to ſeize hold of the butterfly, which ſhe was
" juſt on the point of catching, when her foot
" ſlipped, and ſhe cruſhed at once by her fall,
" the flower, and the pretty little object of her
" wiſhes; even the fairy had but a narrow eſ-
" cape, by concealing herſelf under a ſhell that
" chanced to be beneath the tulip.

" The beauty of the ſcene had now entirely
" vaniſhed, and I ſaw nothing but the bruiſed
" flower, and the dying inſect. A number of
" confuſed ideas now danced before my eyes,
" and my ears were filled with a variety of diſ-
" cordant ſounds. At length a ſmall, ſhrill

"voice diſtinctly articulated the following "words:

"He who now ſpeaks to you"—ſaid the in- "viſible being—"is the deity of the fairies, "and as your curioſity has been excited with "reſpect to the little fairy you have juſt now "ſeen, it ſhall be ſatisfied.—Her name is Ri- "vuletta, and ſhe belongs to the moſt delicate "ſpecies of fairy that exiſts, to whom the care "is given of the vegetable creation. 'Tis they, "who every revolving ſeaſon enliven, and beau- "tify the ſcenes of nature with ſuch a variety "of tinctures; and as they are continually em- "ployed in giving pleaſure, they are peculiarly "happy. What occupations can be more de- "lightful than theirs?"

"* They paint the purple year with varied ſhow,
"Tip the green gem and bid the bloſſom blow.
"They bid the turgid buds receive the breeze,
"Expand to leaves, and ſhade the naked trees.
"When gath'ring damps the miſty nights ſuffuſe,
"They ſprinkle all the morn with balmy dews:
"Bright trembling pearls depend at every ſpray,
"And kept from falling, ſeem to fall away.
"A gloſſy freſhneſs hence the roſe receives,
"And bluſhes ſweet through all her ſilken leaves.

* Parnel's Vigil of Venus.

"Yet think not from this partial view that "they are exempted from the univerſal lot of "every being: they have their miſeries in com- "mon with others. Are there not froſts to nip? "Are there not heats to parch? Are there "not rains to drown, and blights to blaſt the "faireſt of their produce? Nay, have they "not more to fear than all theſe? Has not "their ſad experience taught them that

"Full many a flower is born to bluſh unſeen,
"And waſte its ſweetneſs on the deſart air.

"And conſider what thoſe muſt feel who are "doomed to toil upon ſuch neglected beauties. "Have they not likewiſe learned what to ex- "pect from Man, who robs them of their "choiceſt ſweets ere they are arrived at full "perfection?

"To all theſe various evils the little fairies "are continually ſubject, and fortunate indeed "is ſhe who eſcapes them all. And now look "yonder (ſaid the inviſible being); obſerve "that tulip, and that inſect which formerly "conſtituted the whole happineſs of the unfor-

" tunate Rivuletta: ſhe is now, by the folly of " a child, deprived for ever of it, and rendered " miſerable for the reſt of her life. How often " have I viewed her proudly mounted on her " gilded butterfly aſcend to the higher regions " of the ſylphs, with them

" To ſport and flutter in the fields of air,"

" and then deſcend with equal joy upon her fa- " vourite flower, whoſe loſs by one of the laws " of her ſociety dooms her to perpetual ſlavery.

" Methought that the deity was juſt going " to explain the reaſon of this, when my at- " tention was unexpectedly diverted by the ap- " pearance of the fairy, who was ſlowly riding " on a ſable moth. Her robes, which but a " little while before had looked ſo gay, were " now coloured of the darkeſt green, her coun- " tenance was pale and wan, and I diſcovered " that ſhe really had become a ſlave ſince I had " ſeen her, for as ſhe drew nearer to the re- " mains of her butterfly and ſtretched out her " hand to reach them, I heard the ſound of a " heavy chain upon her little feeble arm.

"I here gave a deep ſigh, and with the vio-
"lence of my emotion I awoke, and hearing
"the buzzing of the bees I ſuddenly recollected
"myſelf. I aroſe from my ſeat to purſue my
"walk homewards, painting upon every but-
"terfly that I ſaw the image of Rivuletta.

"As I was thus recalling to my memory the
"delightful viſion which I had juſt beheld, I
"found that what at firſt ſo ſtrongly caught my
"ſenſes now began to touch my heart, and that
"even in the wildeſt flights of the imagination
"reaſon can trace a moral. The familiar ſhape
"and humble ſpecies of the inſect had made
"me look with indifference on its ſufferings,
"though it expired in agony at my feet; whilſt
"the fair form, graceful motion, and elegant
"attire of the fairy had given importance to her
"imaginary diſtreſs, and had wrung my heart
"with the tendereſt compaſſion."

We have accuſtomed our pupils to form in their minds the conception of figures generated from points and lines, and ſurfaces ſuppoſed to move in different directions, and with different velocities. It may be thought that this would be

a difficult occupation for young minds; but, upon trial, it will be found not only eaſy to them, but entertaining. In their ſubſequent ſtudies it will be of material advantage; it will facilitate their progreſs not only in pure mathematicks, but in mechanicks and aſtronomy, and in every operation of the mind which requires exact reflection.

To demand ſteady thought from a perſon who has not been trained to it, is one of the moſt unprofitable and dangerous requiſitions that can be made in education.

> "Full in the midſt of Euclid dip at once,
> "And petrify a genius to a dunce."

In the uſual commencement of mathematical ſtudies the learner is required to admit that a point, of which he ſees the prototype, a dot before him, has neither length, breadth, nor thickneſs. This, ſurely, is a degree of faith not abſolutely neceſſary for the neophite in ſcience. It is an abſurdity which has, with much ſucceſs, been attacked in "Obſervations on the Nature "of Demonſtrative Evidence," by doctor Beddoes.

We agree with the doctor as to the impropriety of calling a viſible dot a point without dimenſions. But, notwithſtanding the high reſpect which that author commands by a ſteady purſuit of truth on all ſubjects of which he treats, we cannot avoid proteſting againſt part of the doctrine which he has endeavoured to inculcate. That the names point, radius, &c. are derived from ſenſible objects need not be diſputed; but ſurely the word *centre* can be underſtood by the human mind without the preſence of any viſible or tangible ſubſtance.

Where two lines meet, their junction cannot have dimenſions; the junction of two radii of a circle is the centre, and the name centre may be uſed for ever without any relation to a tangible or viſible point. The word boundary, in like manner, means the extreme limit which we call a line; but to aſſert that it has thickneſs, would, from the very terms which are uſed to deſcribe it, be a direct contradiction. Biſhop Berkely, Mr. Walton, Philathetes Cantabrigienſis and Mr. Benjamin Robins, publiſhed ſeveral pamphlets upon this ſubject about half

a century ago. No man had a more penetrating mind than Berkely; but we apprehend that Mr. Robins closed the dispute against him. This is not meant as an appeal to authority, but to apprize such of our readers as wish to consider the argument, where they may meet an accurate investigation of the subject. It is sufficient for our purpose to warn preceptors, not to insist upon their pupils acquiescence in the dogma, that a point, represented by a dot, is without dimensions; and at the same time to profess that we understand distinctly what is meant by mathematicians when they speak of length without breadth, and of a superficies without depth; expressions which, to our minds, convey a meaning as distinct as the name of any visible or tangible substance in nature, whose varieties from shade, distance, colour, smoothness, heat, &c. are infinite, and not to be comprehended in any definition.

In fact, this is a dispute merely about words, and as the extension of the art of printing puts it in the power of every man to propose and to defend his opinions at length, and at leisure,

the beſt friends may ſupport different ſides of a ſpeculative queſtion with mutual regard, and the moſt violent enemies with civility and decorum. Can we believe that Tycho Brahe loſt half his noſe in a diſpute with a Daniſh nobleman about a mathematical demonſtration?

CHAPTER XVII.

ON MECHANICKS.

PARENTS are anxious that children ſhould be converſant with Mechanicks, and with what are called the Mechanick powers. Certainly no ſpecies of knowledge is better ſuited to the taſte and capacity of youth, and yet it ſeldom forms a part of early inſtruction. Every body talks of the lever, the wedge, and the pulley, but when they wiſh to employ theſe organs they frequently perceive that the notions which they have of their reſpective uſes are unſatisfactory, and indiſtinct; and many endeavour at a late period of life, to acquire a ſcientific and exact knowledge of the effects that are produced

by implements which are in every body's hands, or that are abſolutely neceſſary in the daily occupations of mankind.

An itinerant lecturer ſeldom fails of having a numerous and attentive auditory, and if he does not communicate much of that knowledge which he endeavours to explain, it is not to be attributed either to his want of ſkill, or to the inſufficiency of his apparatus, but to the novelty of the terms which he is obliged to uſe. Ignorance of the language in which any ſcience is taught, is an inſuperable bar to its being ſuddenly acquired; beſides a preciſe knowledge of the meaning of terms, we muſt have an inſtantaneous idea excited in our minds whenever they are repeated; and, as this can be acquired only by practice, it is impoſſible that philoſophical lectures can be of much ſervice to thoſe who are not familiarly acquainted with the technical language in which they are delivered; and yet there is ſcarcely any ſubject of human inquiry more obvious to the underſtanding than the laws of mechanicks. Only a ſmall portion of geometry is neceſſary to the

learner, if he even wiſhes to become maſter of the more difficult problems which are uſually contained in a courſe of lectures, and moſt of what is practically uſeful may be acquired by any perſon who is expert in common arithmetick.

But we cannot proceed a ſingle ſtep without deviating from common language; if the theory of the balance, or the lever, is to be explained, we immediately ſpeak of *ſpace* and *time*. To perſons not verſed in literature it is probable, that theſe terms appear more ſimple and intelligible than they do to a man who has read Locke, and other metaphyſical writers. The term *ſpace*, to the bulk of mankind, conveys the idea of an interval; they conſider the word *time* as repreſenting a definite number of years, days, or minutes; but the metaphyſician, when he hears the words *ſpace* and *time*, immediately takes the alarm, and recurs to the abſtract notions which are aſſociated with theſe terms; he perceives difficulties unknown to the unlearned, and feels a confuſion of ideas which diſtracts his attention. The lecturer proceeds

with confidence, never ſuppoſing that his audience can be puzzled by ſuch common words. He means by *ſpace* the diſtance from the place whence a body begins to move to the place where its motion ceaſes; and by *time* he means the number of ſeconds, or of any determinate diviſions of *civil* time which elapſe from the commencement of any motion to its end; or, in other words, the duration of any given motion. After this has been frequently repeated, any intelligent perſon perceives the ſenſe in which theſe terms are uſed by the tenor of the diſcourſe; but in the interim the greateſt part of what he has heard cannot have been underſtood, and the premiſes upon which every ſubſequent demonſtration is founded are unknown to him. If this be true, when it is affirmed of two terms only, what muſt be the ſituation of thoſe to whom eight or ten unknown technical expreſſions occur at the commencement of a lecture? A complete knowledge, ſuch a knowledge as is not only full, but familiar, of all the common terms made uſe of in theoretic and practical mechanicks, is, therefore, abſolutely

neceſſary before any perſon can attend public lectures in natural philoſophy with advantage.

What has been ſaid of public lectures may, with equal propriety, be applied to private inſtruction; and it is probable, that inattention to this circumſtance is the reaſon why ſo few people have diſtinct notions of natural philoſphy. Learning by rote, or even reading repeatedly, definitions of the technical terms of any ſcience, muſt undoubtedly facilitate its acquirement; but converſation, with the habit of explaining the meaning of words, and the ſtructure of common domeſtic implements to children, is the ſure and effectual method of preparing the mind for the acquirement of ſcience.

The ancients, in learning this ſpecies of knowledge, had an advantage of which we are deprived: many of their terms of ſcience were the common names of familiar objects. How few do we meet who have a diſtinct notion of the words radius, angle, or valve? A Roman peaſant knew what a radius or a valve meant, in their original ſignification, as well as a modern profeſſor; he knew that a valve was a

door, and a radius a ſpoke of a wheel; but an Engliſh child finds it as difficult to remember the meaning of the word angle, as the word parabola. An angle is uſually confounded, by thoſe who are ignorant of geometry and mechanicks, with the word triangle, and the long reaſoning of many a laborious inſtructor has been confounded by this popular miſtake. When a glaſs pump is ſhewn to an admiring ſpectator, he is deſired to watch the motion of the valves: he looks "above, about, and underneath;" but, ignorant of the word *valve*, he looks in vain. Had he been deſired to look at the motion of the little *doors* that opened and ſhut, as the handle of the pump was moved up and down, he would have followed the lecturer with eaſe, and would have underſtood all his ſubſequent reaſoning.

If a child attempts to puſh any thing heavier than himſelf, his feet ſlide away from it, and the object can be moved only at intervals, and by ſudden ſtarts; but if he be deſired to prop his feet againſt the wall, he finds it eaſy to puſh what before eluded his little ſtrength. Here

the uſe of a fulcrum, or fixed point, by means of which bodies may be moved, is diſtinctly underſtood. If two boys lay a board acroſs a narrow block of wood, or ſtone, and balance each other at the oppoſite ends of it, they acquire another idea of a center of motion. If a poker is reſted againſt a bar of a grate, and employed to lift up the coals, the ſame notion of a center is recalled to their minds. If a boy ſitting upon a plank, a ſofa, or form, be lifted up by another boy applying his ſtrength at one end of the ſeat, whilſt the other end of the ſeat reſts on the ground, it will be readily perceived by them that the point of reſt, or center of motion, or fulcrum, is the ground, and that the fulcrum is not, as in the firſt inſtance, between the force that lifts, and the thing that is lifted; the fulcrum is at one end, the force which is exerted acts at the other end, and the weight is in the middle. In trying theſe ſimple experiments the terms *fulcrum, center of motion*, &c. ſhould be conſtantly employed, and in a very ſhort time they would be as familiar to a boy of eight years old as to any philoſopher. If for ſome

years the ſame words frequently recur to him in the ſame ſenſe, is it to be ſuppoſed that a lecture upon the balance and the lever would be as unintelligible to him as to perſons of good abilities, who at a more advanced age hear theſe terms from the mouth of a lecturer? A boy in ſuch circumſtances would appear as if he had a genius for mechanicks, when, perhaps, he might have leſs taſte for the ſcience, and leſs capacity than the generality of the audience. Trifling as it may at firſt appear, it will not be found a trifling advantage, in the progreſs of education, to attend to this circumſtance. A diſtinct knowledge of a few terms aſſiſts a learner in his firſt attempts; finding theſe ſucceſsful, he advances with confidence, and acquires new ideas without difficulty or diſguſt. Rouſſeau, with his uſual eloquence, has inculcated the neceſſity of annexing ideas to words; he declaims againſt the ſplendid ignorance of men who ſpeak by rote, and who are rich in words amidſt the moſt deplorable poverty of ideas. To ſtore the memory of his pupil with images of things, he is willing to neglect, and

leave to hazard, his acquirement of language. It requires no elaborate argument to prove that a boy, whoſe mind was ſtored with accurate images of external objects, of experimental knowledge, and who had acquired habitual dexterity, but who was unacquainted with the uſual ſigns by which ideas are expreſſed, would be incapable of accurate reaſoning, or would, at beſt, reaſon only upon particulars. Without general terms he could not abſtract; he could not, till his vocabulary was enlarged, and familiar to him, reaſon upon general topics, or draw concluſions from general principles: in ſhort, he would be in the ſituation of thoſe who, in the ſolution of difficult and complicated queſtions relative to quantity, are obliged to employ tedious and perplexed calculations, inſtead of the clear and comprehenſive methods that unfold themſelves by the uſe of ſigns in algebra.

It is not neceſſary in teaching children the technical language of any art or ſcience, that we ſhould purſue the ſame order that is requiſite in teaching the ſcience itſelf. Order is required in reaſoning, becauſe all reaſoning is

employed in deducing propoſitions from one another in a regular ſeries; but where terms are employed merely as names, this order may be diſpenſed with. It is, however, of great conſequence to ſeize the proper time for introducing a new term; a moment when attention is awake, and when accident has produced ſome particular intereſt in the object. In every family opportunities of this ſort occur without any preparation, and ſuch opportunities are far preferable to a formal lecture and a ſplendid apparatus for the firſt leſſons in natural philoſophy and chemiſtry. If the pump belonging to the houſe is out of order, and the pump-maker is ſet to work, an excellent opportunity preſents itſelf for variety of inſtruction. The center pin of the handle is taken out, and a long rod is drawn up by degrees, at the end of which a round piece of wood is ſeen partly covered with leather. Your pupil immediately aſks the name of it, and the pump-maker prevents your anſwer by informing little maſter that it is called a *ſucker*. You ſhew it to the child, he handles it, feels whether the

leather is hard or ſoft, and at length diſcovers that there is a hole through it which is covered with a little flap or door. This he learns from the workmen is called a *clack*. The child ſhould be permitted to plunge *the piſton* (by which name it ſhould now be called) into a tub of water; in drawing it backwards and forwards he will perceive that the *clack* or *valve*, opens and ſhuts as the piſton is drawn backwards and forwards. It will be better not to inform the child how this mechaniſm is employed in the pump. If the names ſucker and piſton, clack and valve, are fixed in his memory, it will be ſufficient for his firſt leſſon. At another opportunity he ſhould be preſent when the fixed or lower valve of the pump is drawn up; he will examine it, and find that it is ſimilar to the valve of the piſton; if he ſees it put down into the pump, and ſees the piſton put into its place, and ſet to work, the names that he has learned will be fixed more deeply in his mind, and he will have ſome general notion of the whole apparatus. From time to time theſe names ſhould be recalled to his memory

on ſuitable occaſions, but he ſhould not be aſked to repeat them by rote. What has been ſaid is not intended as a leſſon for a child in mechanicks, but as a ſketch of a method of teaching which has been employed with ſucceſs.

Whatever repairs are carried on in a houſe children ſhould be permitted to ſee: whilſt every body about them ſeems intereſted, they become attentive from ſympathy; and whenever action accompanies inſtruction, it is ſure to make an impreſſion. If a lock is out of order, when it is taken off ſhew it to your pupil; point out ſome of its principal parts, and name them; then put it into the hands of the child, and let him manage it as he pleaſes. Locks are full of oil, and black with duſt, but if children have been taught habits of neatneſs, they may be clock-makers and whitesmiths, without ſpoiling their clothes, or the furniture of a houſe. Upon every occaſion of this ſort technical terms ſhould be made familiar; they are of great uſe in the every-day buſineſs of life, and are peculiarly ſerviceable in

giving orders to workmen, who, when they are ſpoken to in a language that they are uſed to, comprehend what is ſaid to them, and work with alacrity.

An early uſe of a rule and pencil, and eaſy acceſs to prints of machines, of architecture, and of the implements of trades, are of obvious utility in this part of education. The machines publiſhed by the Society of Arts in London; the prints in Deſaguliers, Emerſon, le Spectacle de la Nature, Machines approuvées par l'Académie, Chambers's Dictionary, Berthoud ſur l'Horlogerie, Dictionaire des Arts et des Métiers, may, in ſucceſſion, be put into the hands of children. The moſt ſimple ſhould be firſt ſelected, and the pupils ſhould be accuſtomed to attend minutely to one print before another is given to them. A proper perſon ſhould carefully point out and explain to them the firſt prints that they examine, they may afterwards be left to themſelves.

To underſtand prints of machines, a previous knowledge of what is meant by an elevation, a profile, a ſection, a perſpective view, and a

(vue d'oiſeau) bird's eye view, is neceſſary. To obtain diſtinct ideas of ſections, a few models of common furniture, as cheſts of drawers, bellows, grates, &c. may be provided, and may be cut aſunder in different directions. Children eaſily comprehend this part of drawing, and its uſes, which may be pointed out in books of architecture; its application to the common buſineſs of life is ſo various and immediate, as to fix it for ever in the memory; beſides, the habit of abſtraction, which is acquired by drawing the ſections of complicated architecture or machinery, is highly advantageous to the mind. The parts which we wiſh to expreſs in the ſection are unſeen in the elevation or profile of the figure, and are ſuggeſted by the connexion between the end propoſed in the conſtruction of the building, machine, &c. and the means which are adapted to effect it.

A knowledge of perſpective is to be acquired by an operation of the mind directly oppoſite to what is neceſſary in delineating the ſections of bodies; the mind muſt here be intent only upon the objects that are delineated upon the retina;

one edge of which is put under the piece A, will at the ſame time be held faſt to the table.

The index P is to be ſet (at pleaſure) with its ſharp point to any part of an object which we wiſh to delineate, and which the eye ſees through E the eye-piece.

The machine is now to be folded as in Fig. 2, taking care that the index be not diſturbed; the index, which was before perpendicular, will then approach the paper horizontally, and the place to which it points on the paper muſt be marked with a pencil. The machine muſt be again unfolded, and another point of the object is to be aſcertained in the ſame manner as before; theſe points on the paper may be then connected by a line; freſh points ſhould then be taken by the index, marked with a pencil on the paper, and connected by lines; and ſo on ſucceſſively, till the whole object is delineated.

Beſides the common terms of art, the technical terms of ſcience ſhould, by degrees, be rendered familiar to our pupils. Amongſt theſe the words Space and Time occur, as we have obſerved, the ſooneſt, and are of the greateſt

their various parts, without much time, and repeated examination; the reduced ſize of prints lays the whole at once before the eye, and tends to facilitate not only comprehenſion, but contrivance. Whoever can delineate progreſſively as he invents, ſaves much labour, much time, and the hazard of confuſion.

Various contrivances have been employed to facilitate drawing in perſpective, as may be ſeen in "Cabinet de Servier, Mémoires of the "French Academy, Philoſophical Tranſactions, "and lately in the Repertory of Arts." The following is ſimple, cheap, and *portable*.

PLATE 1. FIG. 1.

A B C, three mahogany boards, two, four, and ſix inches long, and of the ſame breadth reſpectively, hinged together, ſo as to fold in the manner repreſented in the plate.

PLATE 1. FIG. 2.

The part A is ſcrewed, or *clamped* to a table of a convenient height, and a ſheet of paper,

one edge of which is put under the piece A, will at the ſame time be held faſt to the table.

The index P is to be ſet (at pleaſure) with its ſharp point to any part of an object which we wiſh to delineate, and which the eye ſees through E the eye-piece.

The machine is now to be folded as in Fig. 2, taking care that the index be not diſturbed; the index, which was before perpendicular, will then approach the paper horizontally, and the place to which it points on the paper muſt be marked with a pencil. The machine muſt be again unfolded, and another point of the object is to be aſcertained in the ſame manner as before; theſe points on the paper may be then connected by a line; freſh points ſhould then be taken by the index, marked with a pencil on the paper, and connected by lines; and ſo on ſucceſſively, till the whole object is delineated.

Beſides the common terms of art, the technical terms of ſcience ſhould, by degrees, be rendered familiar to our pupils. Amongſt theſe the words Space and Time occur, as we have obſerved, the ſooneſt, and are of the greateſt

importance. Without exact definitions, or abſtract reaſonings, a general notion of the uſe of theſe terms may be inculcated by employing them frequently in converſation, and by applying them to things and circumſtances which occur without preparation, and about which children are intereſted, or occupied. "There "is a great ſpace left between the words in "that printing." The child underſtands that ſpace in this ſentence means *white paper* between black letters. "You ſhould leave a "greater ſpace between the flowers which you "are planting,"—he knows that you mean more *ground*. "There is a great ſpace be-"tween that boat and the ſhip,"—ſpace of *water*. "I hope the hawk will not be able to "catch that pigeon, there is a great ſpace be-"tween them,"—ſpace of *air*. "The men "who are pulling that ſack of corn into the "granary, have raiſed it through half the ſpace "between the door and the ground." A child cannot be at any loſs for the meaning of the word ſpace in theſe or any other practical examples which may occur; but he ſhould alſo

be uſed to the word ſpace as a technical expreſſion, and then he will not be confuſed or ſtopped by a new term when employed in mechanicks.

The word *time* may be uſed in the ſame manner upon numberleſs occaſions to expreſs the duration of any movement which is performed by the force of men, or horſes, wind, water, or any mechanical power.

"Did the horſes in the mill we ſaw yeſterday "go as faſt as the horſes which are drawing the "chaiſe?" "No, not ſo faſt as the horſes go "at preſent on level ground; but they went as "faſt as the chaiſe-horſes do when they go up "hill, or as faſt as horſes that draw a waggon."

"How many times do the ſails of that wind-"mill go round in a minute? Let us count; "I will look at my watch; do you count how "often the ſails go round; wait till that broken "arm is uppermoſt, and when you ſay *now* I "will begin to count the *time;* when a minute "has paſſed I will tell you."

After a few trials this experiment will become eaſy to a child of eight or nine years old; he may ſometimes attend to the watch, and at

other times count the turns of the ſails; he may eaſily be made to apply this to a horſe-mill, or to a water-mill, a corn-fan, or any machine that has a rotatory motion; he will be entertained with his new employment; he will compare the *velocities* of different machines; the meaning of this word will be eaſily added to his vocabulary. "Does that part of the arms of the wind-mill "which is near the *axle-tree*, or *center*, (I "mean that part which has no cloth or ſail "upon it,) go as faſt as the ends of the arms "that are the fartheſt from the center?"

"No, not nearly ſo faſt."

"But that part goes as often round in a mi-"nute as the reſt of the ſail."

"Yes, but it does not go as faſt."

"How ſo?"

"It does not go ſo *far* round."

"No, it does not. The extremities of the "ſails *go through more ſpace in the ſame time* "than the parts near the center."

By converſations like theſe the technical meaning of the word *velocity* may be made quite familiar to a child much younger than

what has been mentioned; he may not only comprehend that velocity means time and ſpace conſidered together, but if he is ſufficiently advanced in arithmetick he may be readily taught how to expreſs and compare in numbers *velocities* compoſed of certain portions of time and ſpace. He will not inquire about the abſtract meaning of the word *ſpace*; he has ſeen ſpace meaſured on paper, on timber, on water, in the air, and he perceives diſtinctly that it is a term equally applicable to all diſtances that can exiſt between objects of any ſort, or that he can ſee, feel, or imagine.

Momentum, a leſs common word, the meaning of which it is not quite ſo eaſy to convey to a child, may, by degrees, be explained to him: at every inſtant he feels the effect of momentum in his own motions, and in the motions of every thing that ſtrikes againſt him; his feelings and experience require only proper terms to become the ſubject of his converſation. The proper time to inſtruct him is when he begins to enquire. For inſtance, a boy of ten years old, who had acquired the meaning of ſome other

terms in ſcience, this morning aſked the meaning of the word momentum; he was deſired to explain what he thought it meant.

He anſwered, "Force."

"What do you mean by force?"

"Effort."

"Of what?"

"Of gravity."

"Do you mean that force by which a body "is drawn down to the earth?"

"No."

"Would a feather, if it were moving with "the greateſt conceivable ſwiftneſs or velocity, "throw down a caſtle?"

"No*."

"Would a mountain torn up by the roots, as "fabled in Milton, if it moved with the leaſt "conceivable velocity, throw down a caſtle?"

"Yes, I think it would."

The difference between an uniform, and an uniformly accelerated motion, the meaſure of

* When this queſtion was ſome time afterwards repeated to S——, he obſerved that the feather would throw down the caſtle if its ſwiftneſs were ſo great make up for its want of weight.

the velocity of falling bodies, the compoſition of motions communicated to the ſame body in different directions at the ſame time, and the cauſe of the curvilinear track of projectiles, ſeem, at firſt, intricate ſubjects, and above the capacity of boys of ten or twelve years old; but by ſhort and well-timed leſſons they may be explained without confounding or fatiguing their attention. We tried another experiment whilſt this chapter was writing, to determine whether we had aſſerted too much upon this ſubject. After a converſation between two boys upon the deſcent of bodies towards the earth, and upon the meaſure of the increaſing velocity with which they fall, they were deſired, with a view to aſcertain whether they underſtood what was ſaid, to invent a machine which ſhould ſhew the difference between an uniform and an accelerated velocity, and in particular to ſhew, by ocular demonſtration, "that if one body moves in a given time "through a given ſpace, with an uniform mo- "tion, and if another body moves through the "ſame ſpace in the ſame time with an uniformly

" accelerated motion, the uniform motion of the " one will be equal to half of the greateſt ve- " locity of the other." The eldeſt boy, H——, thirteen years old, invented and executed the following machine for this purpoſe.

Plate 1, Fig. 3. b is a bracket 9 inches by 5, conſiſting of a back and two ſides of hard wood: two inches from the back two ſlits are made in the ſides of the bracket half an inch deep, and an eighth of an inch wide, to receive the two wire pivots of a roller; which roller is compoſed of a cylinder, three inches long and half an inch diameter; and of a cone three inches long and one inch diameter in its largeſt part or baſe. The cylinder and cone are not ſeparate, but are in one piece; a ſtring is faſtened to the cone at its baſe a, with a bullet or any other ſmall weight at the other end of it; and another ſtring and weight are faſtened to the cylindar at (c) the pivot p of wire is bent into the form of a handle; if the handle is turned either way, the ſtrings will be reſpectively wound up upon the cone and cylinder; their lengths ſhould now be adjuſted, ſo that when

the ſtring on the cone is wound up as far as the cone will permit, the two weights may be at an equal diſtance from the bottom of the bracket, which bottom we ſuppoſe to be parallel with the pivots; the bracket ſhould now be faſtened againſt a wall, at ſuch a height as to let the weights lightly touch the floor when the ſtrings are unwound: ſilk or *bobbin* is a proper kind of ſtring for this purpoſe, as it is woven or plaited, and therefore is not liable to twiſt. When the ſtrings are wound up to their greateſt heights, if the handle be turned in the contrary direction with an equable velocity the weights will begin to fall at the ſame moment; but the weight (1) will deſcend at firſt but ſlowly, and will paſs through but ſmall ſpace compared with the weight (2.) As they deſcend farther, (No 2) ſtill continues to get before (No 1) but after ſome time, (No 1) begins to overtake (No 2) and at laſt they come to the ground together. If this machine is required to ſhew exactly the ſpace that a falling body would deſcribe in given times, the cone and cylinder muſt have grooves cut ſpirally upon

their circumference to direct the ſtring with preciſion. To deſcribe theſe ſpiral lines became a new ſubject of enquiry. The young mechanicks were again eager to exert their powers of invention; the eldeſt invented a machine upon the ſame principle as that which is uſed by the beſt workmen for cutting clock fuſees; as deſcribed in Berthoud. The youngeſt invented the following engine, V. Plate 1, Fig. 4.

The roller or cone (or both together), which it is required to cut ſpirally, muſt be furniſhed with a handle, and a toothed wheel w; which turns a ſmaller wheel on pinion w. This pinion carries with it a ſcrew s, which draws forward the puppet P, in which the graver or chiſel G ſlides *without ſhake*. This graver has a point or edge ſhaped properly to form the ſpiral groove, with a ſhoulder to regulate the depth of the groove. The iron rod R, which is firmly faſtened in the puppet, ſlides through mortices at MM, and guides the puppet in a ſtraight line—the puppet by theſe means would move more truly than if the rod were fixed and the puppet made to ſlide upon it.

The reſt of the machine is intelligible from the drawing.

A ſimple method of ſhewing the nature of compound forces was thought of at the ſame time. An ivory ball was placed at the corner of a board ſixteen inches broad, and two feet long; two other ſimilar balls were let to fall down inclined troughs againſt the firſt ball in different directions, but at the ſame time. One fell in a direction parallel to the length of the board; the other back fell in a direction parallel to its breadth. By raiſing the troughs ſeparately, ſuch a force was communicated to each of the falling balls as was found by trial ſufficient to drive the ball that was at reſt to that the oppoſite ſide of the board. When both balls were let fall together they drove the ball which they ſtruck, diagonally, ſo as to reach the oppoſite corner.

If the ſame board were placed as an inclined plane, at an angle of five or ſix degrees, a ball placed at one of its uppermoſt corners would fall with an accelerated motion in a direct line; but if another ball were made (by

deſcending through an inclined trough) to ſtrike the firſt ball at right angles to the line of its former deſcent at the moment when it began to deſcend, this ball would not, as in the former experiment, move diagonally, but would deſcribe a curve. The reaſon why it deſcribes a curve, and why that curve is not circular, was eaſily underſtood.

Children who are thus induced to invent machines or apparatus for explaining and demonſtrating the laws of mechaniſm, not only fix indelibly thoſe laws in their own minds, but enlarge their powers of invention, and preſerve a certain originality of thought, which leads to new diſcoveries. We therefore ſtrongly recommend it to teachers, to uſe as few precepts as poſſible in the rudiments of ſcience, and to encourage their pupils to uſe their own underſtandings as they advance. In acquiring a knowledge of mechaniſm a general view of the powers and uſes of engines is all that need be taught; where more is neceſſary, ſuch a foundation with the aſſiſtance of good books, and the examination of good machinery, will per-

fect the knowledge of theory and facilitate practice.

At firſt we ſhould not encumber our pupils with accurate demonſtration. The application of mathematicks to mechanicks is undoubtedly of the higheſt uſe, and has opened a ſource of ingenious and important inquiry. Archimedes, the greateſt name amongſt mechanic philoſophers, ſcorned the mere practical application of his ſublime diſcoveries, and at the moment when the moſt ſtupendous effects were producing by his engines, he was ſo deeply abſorbed in abſtract ſpeculation as to be inſenſible to the fear of death. We do not entirely approve the ſublime abſtraction of Archimedes, nor do we undervalue either the application of ſtrict demonſtration to problems in mechanics, or the exhibition of the moſt accurate machinery in philoſophical lectures; but we wiſh to point out a method of giving a general notion of the mechanical organs to our pupils, which ſhall be immediately obvious to their comprehenſion, and which may ſerve as a ſure foundation for future improvement. We are told by a vulgar

proverb, that though we believe what we ſee, we have yet a higher belief in what we *feel.* This adage is particularly applicable to mechanics. When a perſon perceives the effect of his own bodily exertions with different engines, and when he can compare in a rough manner their relative advantages, he is not diſpoſed to reject their aſſiſtance, or to expect more than is reaſonable from their application. The young theoriſt in mechanics thinks he can produce a perpetual motion! When he has been accuſtomed to refer to the plain dictates of common ſenſe and experience, on this, as well as on every other ſubject, he will not eaſily be led aſtray by viſionary theories.

To bring the ſenſe of feeling to our aſſiſtance in teaching the uſes of the mechanic powers, the following apparatus was conſtructed, to which we have given the name Panorganon.

It is compoſed of two principal parts; a frame to contain the moving machinery; and a *capſtan* or *windlaſs*, which is erected on a *ſill* or plank, that is ſunk a few inches into the ground; the frame is by this means and by

braces or props rendered ſteady. The croſs rail, or *tranſom*, is ſtrenghened by braces and a king-poſt to make it lighter and cheaper. The *capſtan* conſiſts of an upright ſhaft, upon which are fixed two *drums* (about either of which *drums* a rope may be wound up) and two levers or arms by which the *capſtan* may be turned round. There is alſo a ſcrew of iron fixed round the lower part of the ſhaft, to ſhew the properties of the ſcrew as a mechanic power. The rope which goes round the *drum* paſſes over one of the pulleys near the top of the frame, and under another pulley near the bottom of the frame. As two *drums* of different ſizes are employed, it is neceſſary to have an upright roller to conduct the rope in a proper direction to the pulleys, when either of the *drums* is uſed. Near the frame, and in the direction in which the rope runs, is laid a platform or road of deal boards, one board in breadth, and twenty or thirty feet long, upon which a ſmall ſledge loaded with different weights may be drawn. Plate 2. Fig. 1.

F. F. The frame.

b. b. Braces to keep the frame ſteady.

a. a. a. Angular braces and a king-poſt to ſtrengthen the tranſom.

S. A round, taper, ſhaft, ſtrenghtened above and below the mortices, through which the levers paſs, with iron hoops.

L L. Two arms or levers by which the ſhaft, &c. are to be moved round.

D D. The drums, which are of different circumferences.

R. The roller to conduct the rope.

P. The pulley, round which the rope paſſes to the larger drum.

P 2. Another pulley to *anſwer* to the ſmaller drum.

P 3. A pulley through which the rope paſſes when experiments are tried with levers, &c.

P 4. Another pulley through which the rope paſſes when the ſledge is uſed.

Ro. The road of deal boards for the ſledge to move on.

Sl. The ſledge with pieces of hard wood attached to it to guide it on the road.

Uſes of the Panorganon.

As this machine is to be moved by the force

of men or children, and as their force varies not only with the ſtrength and weight of each individual, but alſo according to the different manner in which that ſtrength or weight is applied, it is, in the firſt place, requiſite to eſtabliſh one determinate mode of applying human force to the machine, and alſo a method of determining the relative force of each individual whoſe ſtrength is applied to it.

To eſtimate the Force with which a Perſon can draw horizontally by a Rope over his Shoulder.

EXPERIMENT I.

Hang a common long ſcale-beam (without ſcales or chains) from the top or *tranſom* of the frame, ſo as that one end of it may come within an inch of one ſide or poſt of the machine. Tie a rope to the hook of the ſcale-beam, where the chains of the ſcale are uſually hung, and paſs it through the pulley P 3, which is about four feet from the ground; let the perſon pull this rope from 1 towards 2, turning his back to the machine, and pulling

the rope over his ſhoulder. Pl. 2. Fig. 6. As the pulley may be either too high or too low to permit the rope to be horizontal, the perſon who pulls it ſhould be placed ten or fifteen feet from the machine, which will leſſen the angular direction of the cord, and the inaccuracy of the experiment. Hang weights to the other end of the ſcale-beam, till the perſon who pulls can but juſt walk forward, pulling fairly without propping his feet againſt any thing. This weight will eſtimate the force with which he can draw horizontally by a rope over his ſhoulder.

Were it thought neceſſary to make theſe experiments perfectly accurate, a ſegment of a pulley, the radius of which is half the length of the ſcale-beam, ſhould be attached to the end of the beam; upon which the cord may apply itſelf, and the pulley (P 3.) ſhould be raiſed or lowered, to bring the rope horizontally from the man's ſhoulder when in the attitude of drawing.

Let a child who tries this, walk on the board with dry ſhoes; let him afterwards chalk his

ſhoes, and afterwards try it with his ſhoes ſoaped; he will find that he can pull with different degrees of force in theſe different circumſtances; but when he tries the following experiments, let his ſhoes be always dry, that his force may be always the ſame.

To ſhew the power of the three different Sorts of Levers.

Experiment II.

The lever L. Fig. 2. Plate 2. is paſſed through a ſocket. Plate 2. Fig. 3. in which it can be ſhifted from one of its ends towards the other; ſo that it may be faſtened at any place by the ſcrew of the ſocket. This ſocket has two gudgeons, upon which it and the lever which it contains can turn. This ſocket and its gudgeons can be lifted out of the holes in which it plays, between the rails R R, Plate 2. Fig. 2. and may be put into other holes at R R, Fig. 5.

Hook the cord that comes over the boys ſhoulder to the end (1) of the lever L. Loop

another rope to the other end of this lever, and let the boy pull as before. Perhaps it ſhould be pointed out, that the boy muſt walk in a direction contrary to that in which he walked before; viz. from 1 towards 3. Fig. 1. The height to which the weight aſcends, and the diſtance to which the boy advances, ſhould be carefully marked and meaſured; and it will be found, that he can raiſe the weight to the ſame height, advancing through the ſame ſpace as in the former experiment. In this caſe, as both ends of the lever moved through equal ſpaces, the lever only changed the direction of the motion, and added no mathematical power to the direct ſtrength of the boy.

Experiment III.

Shift the lever to its extremity in the *ſocket*; the middle of the lever will be now oppoſite to the pulley, Pl. 2. Fig. 4; hook to it the rope that goes through the pulley P 3, and faſten to the other end of the lever the rope by which the boy is to pull. This will be *a lever of the ſecond kind*, as it is called in books of mecha-

nics; in using which, *the reſiſtance is placed between the centre of motion or fulcrum, and the moving power.* He will now raiſe double the weight that he did in Experiment II, and he will advance through double the ſpace.

Experiment IV.

Shift the lever, and the ſocket which forms the axis, (without ſhifting the lever from the place in which it was in the ſocket in the laſt experiment) to the holes that are prepared for it at R R, Plate 2. Fig. 5. The free end of the lever E will now be oppoſite to the rope, and to the pulley (over which the rope comes from the ſcale-beam). Hook this rope to it, and hook the rope by which the boy pulls to the middle of the lever. The effect will now be different from what it was in the two laſt experiments; the boy will advance only half as far, and will raiſe only half as much weight as before. This is called *a lever of the third ſort.* The firſt and ſecond kinds of levers are uſed in quarrying; and the operations of many tools may be referred to them. The third

kind of lever is employed but ſeldom, but its properties may be obſerved with advantage whilſt a long ladder is raiſed, as the man who raiſes it is obliged to exert an increaſing force till the ladder is nearly perpendicular. When this lever is uſed, it is obvious, from what has been ſaid, that the power muſt always paſs through leſs ſpace than the thing which is to be moved; it can never, therefore, be of ſervice in *gaining* power. But the object of ſome machines is to increaſe velocity, inſtead of obtaining power, as in a ſledge-hammer moved by mill-work. (V. the plates in Emerſon's Mechanics. No. 236.)

The experiments upon levers may be varied at pleaſure, increaſing or diminiſhing the mechanical advantage, ſo as to balance the power and the reſiſtance, to accuſtom the learners to calculate the relation between the power and the effect in different circumſtances; always pointing out that whatever exceſs there is in the power*, or in the reſiſtance, is always

* The word *power* is here uſed in a popular ſenſe, to denote the ſtrength or efficacy that is employed to produce an effect by means of any engine.

compenſated by the difference of ſpace through which the inferior paſſes.

The experiments which we have mentioned are ſufficiently ſatisfactory to a pupil, as to the immediate relation between the power and the reſiſtance; but the different ſpaces, through which the power and the reſiſtance move when one exceeds the other, cannot be obvious, without they paſs through much larger ſpaces than levers will permit.

To ſhew the different Space through which the Power and Reſiſtance move in different Circumſtances.

EXPERIMENT V.

Place the ſledge on the fartheſt end of the wooden road, Plate 2. Fig. 1.; faſten a rope to the ſledge, and conduct it through the loweſt pulley P 4, and through the pulley P 3, ſo as that the boy may be enabled to draw it by the rope paſſed over his ſhoulder. The ſledge muſt now be loaded, till the boy can but juſt advance with ſhort ſteps ſteadily upon the wooden road;

this muſt be done with care, as there will be but juſt room for him beſide the rope. He will meet the ſledge exactly on the middle of the road, from which he muſt ſtep aſide to paſs the ſledge. Let the time of this experiment be noted. It is obvious that the boy and the ſledge move with equal velocity, there is therefore no mechanical advantage obtained by the pulleys. The weight that he can draw will be about half a hundred, if he weigh about 9 ſtone; but the exact force with which the boy draws is to be known by Experiment I.

The wheel and axle.

This organ is uſually called in mechanicks, *The axis in peritrochio.* A *hard* name, which might well be ſpared, as the word windlaſs or capſtan, would convey a more diſtinct idea to our pupils.

Experiment VI.

To the largeſt drum, Plate 2, Fig. 1, faſten a cord, and paſs it through the pulley P down-

wards, and then through the pulley P 4 to the ſledge placed at the end of the wooden road, which is fartheſt from the machine. Let the boy, by a rope faſtened to the extremity of one of the arms of the capſtan, and paſſed over his ſhoulder, draw the capſtan round; he will wind the rope round the drum, and draw the ſledge upon its road. To make the ſledge advance twenty-four feet upon its road, the boy muſt have walked circularly 144 feet, which is ſix times as far, and he will be able to draw about three hundred weight, which is ſix times as much as in the laſt experiment.

It may now be pointed out, that the difference of ſpace, paſſed through by the power in this experiment, is exactly equal to the difference of weight, which the boy could draw without the capſtan.

EXPERIMENT VII.

Let the rope be now attached to the ſmaller drum; the boy will draw nearly twice as much weight upon the ſledge as before, and will go through double the ſpace.

EXPERIMENT VIII.

Where there are a number of boys, let five or ſix of them, whoſe power of drawing (eſtimated as in Experiment I) amounts to ſix times as much as the force of the boy at the capſtan, pull at the end of the rope which *was* faſtened to the ſledge; they will balance the force of the boy at the capſtan; either they, or he, by a ſudden pull may advance, but if they pull fairly, there will be no advantage on either part. In this experiment the rope ſhould paſs through the pulley P 3, and ſhould be coiled round the larger drum. And it muſt be alſo obſerved, that in all experiments upon the motion of bodies, in which there is much friction, as where a ſledge is employed, the reſults are never ſo uniform as in other circumſtances.

The pulley.

Upon the pulley we ſhall ſay little, as it is in every body's hands, and experiments may be tried upon it without any particular apparatus. It ſhould, however, be diſtinctly incul-

cated, that the power is not increaſed by a fixed pulley. For this purpoſe, a wheel without a rim, or, to ſpeak with more propriety, a number of ſpokes fixed in a nave ſhould be employed. (Plate 2. Fig. 9.) Pieces like the heads of crutches ſhould be fixed at the ends of theſe ſpokes, to receive a piece of girth-web, which is uſed inſtead of a cord, becauſe a cord would be unſteady; and a ſtrap of iron with a hook to it ſhould play upon the center, by which it may at times be ſuſpended, and from which at other times a weight may be hung.

Experiment IX.

Let this ſkeleton of a pulley be hung by the iron ſtrap from the tranſom of the frame; faſten a piece of web to one of the radii, and another to the end of the oppoſite radius. If two boys of equal weight pull theſe pieces of girth-web, they will balance each other; or two equal weights hung to theſe webs will be in equilibrio. If a piece of girth-web be put round the uppermoſt radius, two equal weights hung at the ends of it will remain immoveable; but

if either of them be pulled, or if a ſmall additional weight be added to either of them, it will deſcend, and the web will apply itſelf ſucceſſively to the aſcending radii, and will detach itſelf from thoſe that are deſcending. If this movement be carefully conſidered, it will be perceived, that the web in unfolding itſelf, acts in the ſame manner upon the radii as two ropes would if they were hung to the extremities of the oppoſite radii in ſucceſſion. The two radii which are oppoſite, may be conſidered as a lever of the firſt ſort, where the center is in the middle of the lever; as each end moves through an equal ſpace, there is no mechanical advantage. But if this ſkeleton-pulley be employed as a common *block* or *tackle*, its motions and properties will be entirely different.

EXPERIMENT X. Plate 2. Fig. 9.

Nail a piece of girth-web to a poſt, at the diſtance of three or four feet from the ground; faſten the other end of it to one of the radii. Faſten another piece of web to the oppoſite radius, and let a boy hold the ſkeleton-pulley ſuſ-

pended by the web; hook weights to the ſtrap that hangs from the center. The end of the radius to which the fixed girth-web is faſtened will remain immoveable; but, if the boy pulls the web which he holds in his hand upwards, he will be able to lift nearly double the weight, which he can raiſe from the ground by a ſimple rope, without the machine, and he will perceive that his hand moves through twice as great a ſpace as the weight aſcends: he has therefore the mechanical advantage, which he would have by a lever of the ſecond ſort, as in Experiment III. Let a piece of web be put round the under radii, let one end of it be nailed to the poſt, and the other be held by the boy, and it will repreſent the application of a rope to a moveable pulley; if its motion be carefully conſidered, it will appear that the radii, as they ſucceſſively apply themſelves to the web, repreſent a ſeries of levers of the ſecond kind. A pulley is nothing more than an infinite number of ſuch levers; the cord at one end of the diameter ſerving as a fulcrum for the *organ* during its progreſs. If this *ſkeleton-pulley* be uſed

horizontally inſtead of perpendicularly, the circumſtances which have been mentioned will appear more obvious.

Upon the wooden road lay down a piece of girth-web; nail one end of it to the road; place the pulley upon the web at the other end of the board, and bringing the web over the radii, let the boy, taking hold of it, draw the loaded ſledge faſtened to the hook at the center of the pulley: he will draw nearly twice as much in this manner as he could without the pulley*.

Here the web lying on the road ſhews more diſtinctly, that it is quieſcent where the loweſt radius touches it; and if the radii, as they tread upon it, are obſerved, their points will appear at reſt, whilſt the center of the pulley will go as faſt as the ſledge, and the top of each radius ſucceſſively (and the boy's hand which unfolds the web) will move twice as faſt as the center of the pulley and the ſledge.

* In all theſe experiments with the ſkeleton pulley ſomebody muſt keep it in its proper direction; as from its ſtructure, which is contrived for illuſtration, not for practical uſe, it cannot retain its proper ſituation without aſſiſtance.

If a perſon, holding a ſtick in his hand, obſerves the relative motions of the top, and the middle, and the bottom of the ſtick, whilſt he inclines it, he will ſee that the bottom of the ſtick has no motion on the ground, and that the middle has only half the motion of the top. This property of the pulley has been dwelt upon, becauſe it elucidates the motion of a wheel rolling upon the ground; and it explains a common paradox, which appears at firſt inexplicable, "The bottom of a rolling wheel "never moves *upon* the road." This is aſſerted only of a wheel moving over hard ground, which, in fact, may be conſidered rather as laying down its circumference upon the road, than as moving upon it.

The inclined Plane and the Wedge.

The *inclined plane* is to be next conſidered. When a heavy body is to be raiſed, it is often convenient to lay a ſloping artificial road of planks, up which it may be puſhed or drawn. This mechanical power, however, is but of little ſervice without the aſſiſtance of wheels or

rollers; we ſhall therefore ſpeak of it as it is applied in another manner, under the name of *the wedge*, which is in fact a moving inclined plane; but if it is required to explain the properties of the inclined plane by the Panorganon, the wooden road may be raiſed and ſet to any inclination that is required, and the ſledge may be drawn upon it as in the former experiments.

Let one end of a lever, N. Plate 2. Fig. 7. with a wheel at one end of it, be hinged to the poſt of the frame, by means of a gudgeon driven or ſcrewed into the poſt. To prevent this lever from deviating ſideways, let a ſlip of wood be connected with it by a nail, which ſhall be faſt in the lever, but which moves freely in a hole in the rail. The other end of this ſlip muſt be faſtened to a ſtake driven into the ground at three or four feet from the lever, at one ſide of it, and towards the end in which the wheel is fixed (Plate 2. Fig. 10. which is a *vue d'oiſeau*) in the ſame manner as the treadle of a common lathe is managed, and as the treadle of a loom is ſometimes guided*.

* In a loom this ſecondary lever is called *a lamb*, by miſtake, for *lam*; from *lamina*, a ſlip of wood.

EXPERIMENT XI.

Under the wheel of this lever place an inclined plane or half-wedge (Plate 2. Fig. 7.) on the wooden road, with rollers under it, to prevent friction*; faſten a rope to the foremoſt end of the wedge, and paſs it through the pulleys (P. 4. and P. 3.) as in the fifth experiment. Let a boy draw the ſledge by this rope over his ſhoulder, and he will find, that as it advances it will raiſe the weight upwards; the wedge is five feet long, and elevated one foot. Now, if the perpendicular aſcent of the weight, and the ſpace through which he advances be compared, he will find that the ſpace through which he has paſſed will be five times as great as that through which the weight has aſcended; and that *this* wedge has enabled

* There ſhould be three rollers uſed; one of them muſt be placed before the ſledge, under which it will eaſily find its place, if the bottom of the ſledge near the foremoſt end is a little ſloped upwards. To retain this foremoſt roller in its place till the ſledge meets it, it ſhould be ſtuck ſlightly on the road with two ſmall bits of wax or pitch.

him to raiſe five times as much as he could raiſe without it, if his ſtrength were applied, as in Experiment I, without any mechanical advantage. By making this wedge in two parts, hinged together, with a graduated piece to keep them aſunder, the wedge may be adjuſted to any given obliquity; and it will be always found, that the mechanical advantage of the wedge may be aſcertained by comparing its perpendicular elevation with its baſe. If the baſe of the wedge is 2, 3, 4, 5, or any other number of times greater than its height, it will enable the boy to raiſe reſpectively 2, 3, 4, or 5 times more weight than he could do in Experiment I, by which his power is eſtimated.

The Screw.

The Screw is an inclined plane wound round a cylinder: the height of all its revolutions round the cylinder taken together, compared with the ſpace, through which the power that turns it paſſes, is the meaſure of its *mechanical*

*advantage**. Let the lever, uſed in the laſt experiment, be turned in ſuch a manner as to reach from its gudgeon to the ſhaft of the Panorganon, guided by an attendant lever as before. (Plate 2. Fig. 8.) Let the wheel reſt upon the loweſt *helix* or thread of the ſcrew: as the arms of the ſhaft are turned round, the wheel will aſcend, and carry up the weight which is faſtened to the lever †. As the ſituation of the ſcrew prevents the weight from being ſuſpended exactly from the center of the ſcrew, proper allowance muſt be made for this in eſtimating the force of the ſcrew, or determining the mechanical advantage gained by the lever: this can be done by meaſuring the

* *Mechanical advantage* is not a proper term, but our language is deficient in proper technical terms. The word *power* is uſed ſo indiſcriminately, that it is ſcarcely poſſible to convey our meaning, without employing it more ſtrictly.

† In this experiment, the boy ſhould pull as near as poſſible to the ſhaft, within a foot of it, for inſtance, elſe he will have ſuch mechanical advantage as cannot be counterbalanced by any weight which the machine would be ſtrong enough to bear: and in all theſe experi-

perpendicular aſcent of the weight, which in all caſes is uſeful, and more expeditious than meaſuring the parts of a machine, and eſtimating its force by calculation; becauſe the different diameters of ropes, and other ſmall circumſtances, are frequently miſtaken in eſtimates—both methods ſhould be employed and their reſults compared. The ſpace paſſed through by the moving power, and by that which it moves, are infallible data for eſtimating the powers of engines.

Two material ſubjects of experiments yet remain for the Panorganon; friction, and wheels of carriages; but we have already extended this article far beyond its juſt proportion to ſimilar chapters in this work. We repeat, that it is not intended in this, or in any other

ments we beg the learned reader to obſerve, that accuracy is not the object in view—different reſults will ariſe from adventitious circumſtances, ſuch as the pliability or hardneſs of ropes, the ſwelling or ſhrinking of wood, &c. &c.——One practical advantage, however, will ariſe from theſe circumſtances—the effect of friction and the imperfection and deterioration of materials will be impreſſed upon the young mechanick.

part of our deſign, to write treatiſes upon ſcience: but merely to point out methods of initiating young people in the rudiments of knowledge, and of giving them a clear and diſtinct view of thoſe principles upon which they are founded. No preceptor, who has had experience, will cavil at the ſuperficial knowledge of a boy of twelve or thirteen upon theſe ſubjects; he will perceive, that the general view, which we wiſh to give our pupils of the uſeful arts and ſciences, muſt certainly tend to form a taſte for literature and inveſtigation. The *ſciolift* has learned only to *talk*—we wiſh to teach our pupils to *think*, upon the various objects of human ſpeculation.

The Panorganon may be employed in trying the reſiſtance of air and water; the force of different muſcles; and in a great variety of amuſing and uſeful experiments. In academies, and private families, it may be erected in the place allotted for amuſement, where it will furniſh entertainment for many a vacant hour. When it has loſt its novelty, the ſhaft may from time to time be taken down, and a

ſwing may be ſuſpended in its place. It may be conſtructed at the expence of five or ſix pounds: that which ſtands before our window was made for leſs than three guineas, as we had many of the materials beſide us for other purpoſes.

Dec. 8, 1800. "Scientific Dialogues" have juſt reached us, they ſeem well calculated to follow "Evenings at Home," as they contain a large quantity of accurate knowledge in a compendious form, and in clear and eaſy language. We had begun a book on a ſimilar plan, which we are pleaſed to find is now become unneceſſary; we ſhall therefore bound our humble labours to a ſmall volume on the rudiments of ſcience for young children.

CHAPTER XVIII.

CHEMISTRY.

IN the firſt attempts to teach chemiſtry to children, objects ſhould be ſelected, the principal properties of which may be eaſily diſcriminated by the ſenſes of touch, taſte, or ſmell; and ſuch terms ſhould be employed as do not require accurate definition.

When a child has been caught in a ſhower of ſnow, he goes to the fire to warm and dry himſelf. After he has been before the fire for ſome time, inſtead of becoming dry, he finds that he is wetter than he was before; water drops from his hat and clothes, and the ſnow with which he was covered diſappears. If you

aſk him what was become of the ſnow, and why he has become wetter, he cannot tell you. Give him a tea-cup full of ſnow, deſire him to place it before the fire, he perceives that the ſnow melts, that it has become water. If he puts his finger into the water, he finds that it is warmer than ſnow; he then perceives that the fire which warmed him, warmed likewiſe the ſnow which then became water; or, in other words, he diſcovers, that the heat which came from the fire goes into the ſnow and melts it: he thus acquires the idea of the diſſolution of ſnow by heat.

If the cup containing the water, or melted ſnow, be taken from the fire, and put out of the window on a froſty day, he perceives, that in time the water grows colder, that a thin brittle ſkin ſpreads over it, which grows thicker by degrees, till at length all the water becomes ice; and if the cup be again put before the fire, the ice returns to water. Thus he diſcovers, that by diminiſhing the heat of water it becomes ice; by adding heat to ice it becomes water.

A child watches the drops of melted ſealing wax as they fall upon paper. When he ſees you ſtir the wax about, and perceives, that what was formerly hard, now becomes ſoft, and very hot, he will apply his former knowledge of the effects of heat upon ice and ſnow, and he will tell you, that the heat of the candle melts the wax. By theſe means the principle of the liquefaction of bodies by heat will be imprinted upon his memory; and you may now enlarge his idea of liquefaction.

When a lump of ſugar is put into a diſh of hot tea, a child ſees that it becomes leſs and leſs, till at laſt it diſappears. What has become of the ſugar? Your pupil will ſay, that it is melted by the heat of the tea; but if it be put into cold tea, or cold water, he will find that it diſſolves, though more ſlowly. You ſhould then ſhew him ſome fine ſand, ſome clay, and chalk, thrown into water; and he will perceive the difference between mechanical mixture, or diffuſion, and chemical mixture, or ſolution. Chemical mixture, as that of ſalt in water, depends upon the attraction that ſubſiſts be-

tween the parts of the ſolid and fluid which are combined. Mechanical mixture is only the ſuſpenſion of the parts of a ſolid in a fluid. When fine ſand, chalk, or clay, are put into water, the water continues for ſome time turbid or muddy; but by degrees the ſand, &c. falls to the bottom, and the water becomes clear. In the chemical mixture of ſalt and water there is no muddineſs, the fluid is clear and tranſparent, even whilſt it is ſtirred, and when it is at reſt there is no ſediment, the ſalt being combined with the water; a new fluid ſubſtance is formed out of the two ſimple bodies ſalt and water, and though the parts of the ſalt which compoſe the mixture are not diſcernable to the eye, yet they are perceptible by the taſte.

After he has obſerved the mixture, the child ſhould be aſked, whether he knows any method by which he can ſeparate the ſalt from the water. In the boiling of a kettle of water he has ſeen the ſteam which iſſues from the mouth of the veſſel, he knows that the ſteam is formed by the heat from the fire, which joining with the water drives its parts farther aſunder, and

makes it take another form, that of vapour or ſteam. He may apply this knowledge to the ſeparation of the ſalt and water; he may turn the water into ſteam, and the ſalt will be left in the veſſel in a ſolid form. If, inſtead of evaporating the water, the boy had added a greater quantity of ſalt to the mixture, he would have ſeen, that after a certain time, the water would have diſſolved no more of the ſalt; the ſuperfluous ſalt would fall to the bottom of the veſſel as the ſand had done: the pupil ſhould then be told that the liquid is *ſaturated* with the ſolid.

By theſe ſimple experiments a child may acquire a general knowledge of ſolution, evaporation, and ſaturation, without the formality of a lecture, or the apparatus of a chemiſt. In all your attempts to inſtruct him in chemiſtry, the greateſt care ſhould be taken that he ſhould completely underſtand one experiment, before you proceed to a ſecond. The common metaphorical expreſſion, that the mind ſhould have time to digeſt the food which it receives, is founded upon fact and obſervation.

Our pupil ſhould ſee the ſolution of a variety

of ſubſtances in fluids, as marble, chalk, or alkalies, in acids; and camphor in ſpirits of wine: this laſt experiment he may try by himſelf, as it is not dangerous. Certainly many experiments are dangerous, and therefore unfit for children; but others may be ſelected, which they may ſafely try without any aſſiſtance; and thoſe that are dangerous may, when they are neceſſary, be ſhewn to them by ſome careful perſon. Their firſt experiments may be ſuch as they can readily execute, and of which the reſult may probably be ſucceſsful: this ſucceſs will pleaſe and intereſt the pupils, and will encourage them to perſeverance.

A child may have ſome ſpirit of wine and ſome camphor given to him: the camphor will diſſolve in the ſpirit of wine, till the ſpirit is ſaturated; but then he will be at a loſs how to ſeparate them again. To ſeparate them he muſt pour into the mixture a conſiderable quantity of water; he will immediately ſee the liquor, which was tranſparent, become muddy and white: this is owing to the ſeparation of the camphor from the ſpirit; the camphor riſes to the top of

the veſſel in the form of a curd. If the child had weighed the camphor, both before and after its ſolution, he would have found the reſult nearly the ſame. He ſhould be informed, that this *chemical operation* (for technical terms may now be uſed) is called *precipitation*: the ſubſtance that is ſeparated from the mixture by the introduction of another body is diſengaged, or precipitated from the mixture. In this inſtance the ſpirit of wine attracted the camphor, and therefore diſſolved it. When the water was poured in, the ſpirit of wine attracted the water more ſtrongly than it did the camphor; the camphor being let looſe, roſe by its ſpecific gravity to the ſurface of the mixture.

The pupil has now been ſhewn two methods, by which a ſolid may be ſeparated from a fluid in which it has been diſſolved.

A ſtill ſhould now be produced, and the pupil ſhould be inſtructed in the nature of diſtillation. By experiments he will learn the degrees of *volatility* of different bodies; or, in other words, he will learn that ſome are turned into vapour, by a greater or leſs degree of heat than

others. The degrees of heat ſhould be ſhewn to him by the thermometer, and the uſe of the thermometer, and its nature, ſhould be explained. As the pupil already knows that moſt bodies expand by heat, he will readily underſtand, that an increaſe of heat extends the mercury in the bulb of the thermometer, which, having no other ſpace for its expanſion, riſes in the ſmall glaſs tube; and the degree of heat to which it is expoſed is marked by the figures on the ſcale of the inſtrument.

The buſineſs of diſtillation is to ſeparate the more volatile, from the leſs volatile parts of bodies. The whole mixture is put into a veſſel, under which there is fire: the moſt volatile liquor begins firſt to turn into vapour, and riſes into a higher part of the veſſel, which, being kept cold by being farther removed from the fire, or by water or ſnow, condenſes the evaporated fluid; after it has been condenſed it drops into another veſſel. In the experiment that the child has juſt tried, after having ſeparated the camphor from the ſpirit of wine, he may ſeparate the ſpirit from the water by diſtillation.

When the ſubſtance that riſes, or that is ſeparated from other bodies by heat, is a ſolid, or when what is collected after the operation is ſolid, the proceſs is not called diſtillation, but ſublimation.

Our pupil may next be made acquainted with the general qualities of acids and alkalies. For inſtructing him in this part of chemiſtry, definition ſhould as much as poſſible be avoided; the mode of example, and ocular demonſtration, ſhould be purſued. Who would begin to explain by words the difference between an acid and an alkali, when theſe can be ſhewn by experiments upon the ſubſtances themſelves? The firſt great difference, which is perceptible between an acid and an alkali, is their taſte. Let a child have a diſtinct perception of the difference of their taſtes; let him be able to diſtinguiſh them when his eyes are ſhut; let him taſte the ſtrongeſt of each ſo diluted with water as not to hurt him, and when he has once acquired diſtinct notions of the pungent taſte of an alkali, and of the ſour taſte of an acid, he will never forget the difference. He

muſt afterwards ſee the effects of an acid and alkali on the blue colour of vegetables at *ſeparate times*, and not on the ſame day; by theſe means he will more eaſily remember the experiments, and he will not confound their different reſults. The blue colour of vegetables is turned red by acids, and green by alkalies. Let your pupil take a radiſh, and ſcrape off the blue part into water; it ſhould be left for ſome time, till the water becomes of a blue colour: let him pour ſome of this liquor into two glaſſes; add vinegar or lemon juice to one of them, and the liquor will become red; diſſolve ſome alkali in water, and pour this into the other glaſs, and the diſſolved radiſh will become green. If into the red mixture a ſufficient quantity of alkali be poured, the colour will change into green; and if into the liquor which was made green a ſufficient quantity of acid be poured, the colour will change to red: thus alternately you may pour acid or alkali, and produce a red or green colour ſucceſſively. Paper ſtained with the blue colour of vegetables is called *teſt* paper; this is changed by the leaſt powerful of the acids

or alkalies, and will therefore be peculiarly uſeful in the firſt experiments of our young pupils. A child ſhould for ſafety uſe acids conſiderably diluted with water in his firſt trials, but he ſhould be ſhewn that the effects are ſimilar whatever acids we employ; only the colour will be darker when we make uſe of the leſs, than when we uſe the more dilute acids. By degrees the pupil ſhould be accuſtomed to employ the ſtrong acids; ſuch as the vitriolic, the nitric, and the muriatic, which three are called foſſil acids, to diſtinguiſh them from the vegetable, or weaker acids. We may be permitted to adviſe the young chemiſt to acquire the habit of wiping the neck of the veſſel out of which he pours any ſtrong acid, as the drops of the liquor will not then burn his hand when he takes hold of the bottle; nor will they injure the table upon which he is at work. This cuſtom, trivial as it may ſeem, is of advantage, as it gives an appearance of order, and of eaſe, and ſteadineſs, which are all neceſſary in trying chemical experiments. The little pupil may be told, that the cuſtom we have juſt mentioned is the

conſtant practice of that great chemiſt Dr. Black.

We ſhould take care how we firſt uſe the term *ſalt* in ſpeaking to children, leſt they ſhould acquire indiſtinct ideas: he ſhould be told, that the kind of ſalt which he eats is not the only ſalt in the world; he may be put in mind of the kind of ſalts which he has perhaps ſmelt in ſmelling-bottles; and he ſhould be further told, that there are a number of earthy, alkaline, and metallic ſalts, with which he will in time become acquainted.

When an acid is put upon potaſh, or upon limeſtone, chalk, or marle, a bubbling may be obſerved, and a noiſe is heard; a child ſhould be told, that this is called *effervescence*. After ſome time the effervescence ceaſes, and the limeſtone, &c. are diſſolved in the acid. This effervescence, the child ſhould be informed, ariſes from the eſcape of a conſiderable quantity of a particular ſort of air, called fixed air, or carbonic acid gas. In the ſolution of the lime in the acid, the lime and acid have an attraction for one another; but as the preſent

mixture has no attraction for the gas, it escapes, and in rising forms the bubbling or effervescence. This may be proved to a child, by shewing him, that if an acid is poured upon caustic lime (lime which has had this gas taken from it by fire), there will be no effervescence.

There are various other chemical experiments with which children may amuse themselves; they may be employed in analysing marle, or clays; and they may be provided with materials for making ink. It should be pointed out to them, that the common domestic and culinary operations of making butter and cheese, baking, brewing, &c. are all chemical processes. We hope the reader will not imagine, that we have in this slight sketch pretended to point out the *best* experiments which can be devised for children; we have only offered a few of the simplest which occur to us, that parents may not at the conclusion of this chapter exclaim, "What is to be done? "How are we to *begin?* What experiments "are suited to children? If we knew; our "children should try them?"

It is of little conſequence what particular experiment is ſelected as the firſt; we only wiſh to ſhew, that the minds of children may be turned to this ſubject; and that, by accuſtoming them to obſervation, we give them not only the power of learning what has been already diſcovered, but of adding, as they grow older, ſomething to the general ſtock of human knowledge.

CHAPTER XIX.

ON PUBLIC AND PRIVATE EDUCATION.

THE anxious parent, after what has been ſaid concerning taſks and claſſical literature, will inquire whether the whole plan of education recommended in the following pages is intended to relate to public or to private education. It is intended to relate to both. It is not uſual to ſend children to ſchool before they are eight or nine years old; our firſt object is to ſhew how education may be conducted to that age in ſuch a manner, that children may be well prepared for the acquiſition of all the knowledge uſually taught at ſchools, and may be

free from many of the faults that pupils ſometimes have acquired before they are ſent to any public ſeminary. It is obvious, that public preceptors would be ſaved much uſeleſs labour and anxiety, were parents to take ſome pains in the previous inſtruction of their children; and more eſpecially, if they were to prevent them from learning a taſte for total idleneſs, or habits of obſtinacy and of falſehood, which can ſcarcely be conquered by the utmoſt care and vigilance. We can aſſure parents from experience, that if they purſue ſteadily a proper plan with regard to the underſtanding and the moral habits of their children, they will not have much trouble with their education after the age we have mentioned, ſo long as they continue to inſtruct them at home; and if they ſend them to public ſchools, their ſuperiority in intellect and in conduct will quickly appear.

Though we have been principally attentive to all the circumſtances which can be eſſential to the management of young people during the firſt nine or ten years of their lives, we have by no means confined our obſervations to this

period alone; we have endeavoured to lay before parents a general view of the human mind (as far as it relates to our ſubject), of proper methods of teaching, and of the objects of rational inſtruction; ſo that they may extend the principles which we have laid down through all the ſucceeding periods of education, and may apply them as it may beſt ſuit their peculiar ſituations, or their peculiar wiſhes. We are fully conſcious, that we have executed but very imperfectly even our own deſign; that experimental education is yet but in its infancy, and that boundleſs ſpace for improvement remains; but we flatter ourſelves, that attentive parents and preceptors will conſider with candour the practical aſſiſtance which is offered to them, eſpecially as we have endeavoured to expreſs our opinions without dogmatical preſumption, and without the illiberal excluſion of any exiſting inſtitutions or prevailing ſyſtems. People, who, even with the beſt intentions, attack with violence any of theſe, and who do not conſider what is practicable, as well as what ought to be done, are not likely to per-

ſuade, or to convince mankind, to increaſe the general ſum of happineſs, or their own portion of felicity. Thoſe who really deſire to be of ſervice to ſociety ſhould point out decidedly, but with temperate indulgence for the feelings and opinions of others, whatever appears to them abſurd or reprehenſible in any prevailing cuſtoms: having done this, they will reſt in the perſuaſion, that what is moſt reaſonable will ultimately prevail.

Mankind, at leaſt the prudent and rational part of mankind, have an averſion to pull down till they have a moral certainty that they can build up a better edifice than that which has been deſtroyed. Would you, ſays an eminent writer, convince me, that the houſe I live in is a bad one, and would you perſuade me to quit it, build a better in my neighbourhood, I ſhall be very ready to go into it, and ſhall return you my very ſincere thanks. Till another houſe be ready, a wiſe man will ſtay in his old one, however inconvenient its arrangement, however ſeducing the plans of the enthuſiaſtic projector. We do not ſet up for projectors,

or reformers; we wiſh to keep ſteadily in view the actual ſtate of things, as well as our own hopes of progreſſive improvement; and to ſeize and combine all that can be immediately ſerviceable; all that can aſſiſt, without precipitating improvements. Every well informed parent, and every liberal ſchoolmaſter, muſt be ſenſible, that there are many circumſtances in the management of public education which might be condemned with reaſon; that too much time is ſacrificed to the ſtudy of the learned languages; that too little attention is paid to the general improvement of the underſtanding and formation of the moral character; that a ſchoolmaſter cannot pay attention to the temper or habits of each of his numerous ſcholars; and that parents during that portion of the year which their children ſpend with them, are not ſufficiently ſolicitous to co-operate with the views of the ſchoolmaſter; ſo that the public is counteracted by the private education. Theſe and many other things we have heard objected to ſchools; but what are we to put in the place of ſchools? How are vaſt numbers who

are themſelves occupied in public or profeſſional purſuits, how are men in buſineſs or in trade, artiſts or manufacturers, to educate their families, when they have not time to attend to them; when they may not think themſelves perfectly prepared to undertake the claſſical inſtruction, and entire education of their children, and when, perhaps, they may not be in circumſtances to engage the aſſiſtance of ſuch a preceptor as they could approve? It is obvious, that if in ſuch ſituations parents were to attempt to educate their children at home, they would haraſs themſelves, and probably ſpoil their pupils irrecoverably. It would, therefore, be in every reſpect impolitic and cruel to diſguſt thoſe with public ſchools, who have no other reſource for the education of their families. There is another reaſon which has perhaps operated upon many in the middle ranks of life unperceived, and which determines them in favour of public education. Perſons of narrow fortune, or perſons who have acquired wealth in buſineſs, are often deſirous of breeding up their ſons to the liberal profeſſions; and

they are conſcious that the company, the language, and the ſtyle of life, which their children would be accuſtomed to at home, are beneath what would be ſuited to their future profeſſions. Public ſchools efface this ruſticity, and correct the faults of provincial dialect: in this point of view they are highly advantageous. We ſtrongly recommend it to ſuch parents to ſend their children to large public ſchools, to Eton or Weſtminſter; not to any ſmall ſchool: much leſs to one in their own neighbourhood. Small ſchools are apt to be filled with perſons of nearly the ſame ſtations, and out of the ſame neighbourhood: from this circumſtance they contribute to perpetuate uncouth antiquated idioms, and many of thoſe obſcure prejudices which cloud the intellect in the future buſineſs of life.

Whilſt we admit the neceſſity which compels the largeſt portion of ſociety to prefer public ſeminaries of education, it is incumbent upon us to caution parents from expecting that the moral character, the underſtandings, or the tempers of their children, ſhould be improved

at large ſchools; there the learned languages, we acknowledge, are ſucceſsfully taught. Many ſatisfy themſelves with the aſſertion, that public education is the leaſt troubleſome, that a boy once ſent to ſchool is ſettled for ſeveral years of life, and will require only ſhort returns of parental care twice a year at the holidays. It is hardly to be ſuppoſed, that thoſe who think in this manner ſhould have paid any anxious, or at leaſt any judicious attention to the education of their children, previouſly to ſending them to ſchool. It is not likely that they ſhould be very ſollicitous about the commencement of an education which they never meant to finiſh: they would think that what could be done during the firſt few years of life is of little conſequence; that children from four to ſeven years old are too young to be taught; and that a ſchool would ſpeedily ſupply all deficiencies, and correct all thoſe faults which begin at that age to be troubleſome at home. Thus to a public ſchool, as to a general infirmary for mental diſeaſe, all deſperate ſubjects are ſent, as the laſt reſource. They take with them the contagion of their

vices, which quickly runs through the whole tribe of their companions, eſpecially amongſt thoſe who happen to be nearly of their own age, whoſe ſympathy peculiarly expoſes them to the danger of infection. We are often told, that as young people have the ſtrongeſt ſympathy with each other, they will learn moſt effectually from each other's example. They do learn quickly from example, and this is one of the dangers of a public ſchool; a danger which is not neceſſary, but incidental; a danger againſt which no ſchoolmaſter can poſſibly guard, but which parents can by the previous education of the pupils prevent. Boys are led, driven, or carried to ſchool; and in a ſchool room they firſt meet with thoſe who are to be their fellow priſoners. They do not come with freſh unprejudiced minds to commence their courſe of ſocial education, they bring with them all the ideas and habits which they have already learned at their reſpective homes. It is highly unreaſonable to expect that all theſe habits ſhould be reformed by a public preceptor. If he had patience, how could he have time for ſuch an

undertaking? Thoſe who have never attempted to break a pupil of any one bad habit, have no idea of the degree of patience requiſite to ſucceſs. We once heard an officer of dragoons aſſert, that he would rather break twenty horſes of their bad habits, than one man of his. The proportionate difficulty of teaching boys may be eaſily calculated.

It is ſometimes aſſerted, that the novelty of a ſchool life, the change of ſituation, alters the habits, and forms in boys a new character. Habits of eight or nine years ſtanding cannot be inſtantaneouſly, perhaps can never be radically deſtroyed; they will mix themſelves imperceptibly with the new ideas which are planted in the mind, and though theſe may ſtrike the eye by the rapidity of their growth, the others, which have taken a ſtrong root, will not eaſily be diſpoſſeſſed of the ſoil. In this new character, as it is called, there will to a diſcerning eye appear a ſtrong mixture of the old diſpoſition. The boy, who at home lived with his father's ſervants, and who was never taught any ſpecies of literature, will not acquire

a taſte for it at ſchool, merely by being compelled to learn his leſſons; the boy who at home was ſuffered to be the little tyrant of a family, will, it is true, be forced to ſubmit to ſuperior ſtrength or ſuperior numbers at ſchool*; but does it improve the temper to practiſe alternately the habits of a tyrant and a ſlave? The leſſon which experience uſually teaches to the temper of a ſchoolboy is, that ſtrength, and power, and cunning, will inevitably govern in ſociety; as to reaſon, it is out of the queſtion, it would be hiſſed or laughed out of company. With reſpect to ſocial virtues, they are commonly amongſt ſchoolboys ſo much mixed with party ſpirit, that they miſlead even the beſt diſpoſitions. A boy at home, whoſe pleaſures are all immediately connected with the idea of ſelf, will not feel a ſudden enlargement of mind from entering a public ſchool. He will, probably, preſerve his ſelfiſh character in his new ſociety; or, if he catches that of his companions, the progreſs is not great in moral

* V. Barnes's Eſſay on public and private Education. The Memoirs of Manchcſter Society.

education from ſelfiſhneſs to ſpirit of party; the one is a deſpicable, the other a dangerous principle of action. It has been obſerved, that what we are when we are twenty, depends on what we were when we were ten years old. What a young man is at college, depends upon what he was at ſchool; and what he is at ſchool, depends upon what he was before he went to ſchool. In his father's houſe the firſt important leſſons, thoſe which decide his future abilities, and character, muſt be learned. We have repeated this idea, and placed it in different points of view, in hopes that it will catch and fix the attention. Suppoſe that parents educated their children well for the firſt eight or nine years of their lives, and then ſent them all to public ſeminaries, what a difference this muſt immediately make in public education: the boys would be diſpoſed to improve themſelves with all the ardour which the moſt ſanguine preceptor could deſire; their tutors would find that there was nothing to be *unlearned;* no habits of idleneſs to conquer; no peryerſe ſtupidity would provoke them; no capricious con-

tempt of application would appear in pupils of the quickeſt abilities. The moral education could then be made a part of the preceptor's care, with ſome hopes of ſucceſs; the pupils would all have learned the firſt neceſſary moral principles and habits; they would, conſequently, be all fit companions for each other; in each other's ſociety they would continue to be governed by the ſame ideas of right and wrong by which they had been governed all their lives; they would not have any new character to learn; they would improve, by mixing with numbers, in the ſocial virtues, without learning party ſpirit; and though they would love their companions, they would not therefore combine together to treat their inſtructors as pedagogues and tyrants. This may be thought an Utopian idea of a ſchool; indeed it is very improbable, that out of the numbers of parents who ſend their children to large ſchools, many ſhould ſuddenly be much moved, by any thing that we can ſay, to perſuade them to take ſerious trouble in their previous inſtruction. But much may be effected by gradual attempts: ten well-educated boys,

ſent to a public ſeminary at nine or ten years old, would, probably, far ſurpaſs their competitors in every reſpect, they would inſpire others with ſo much emulation, would do their parents and preceptors ſo much credit, that numbers would eagerly inquire into the cauſes of their ſuperiority; and theſe boys would perhaps do more good by their example, than by their actual acquirements. We do not mean to promiſe that a boy judiciouſly educated ſhall appear at ten years old a prodigy of learning; far from it: we ſhould not even eſtimate his capacity, or the chance of his future progreſs, by the quantity of knowledge ſtored in his memory, by the number of Latin lines he had got by rote, by his expertneſs in repeating the rules of his grammar, by his pointing out a number of places readily in a map, or even by his knowing the latitude and longitude of all the capital cities in Europe; theſe are all uſeful articles of knowledge, but they are not the teſts of a good education. We ſhould rather, if we were to examine a boy of ten years old, for the credit of his parents, produce proofs of his being able

to reaſon accurately, of his quickneſs in invention, of his habits of induſtry and application, of his having learned to generaliſe his ideas, and to apply his obſervations and his principles: if we found that he had learned all, or any of theſe things, we ſhould be in little pain about grammar, or geography, or even Latin; we ſhould be tolerably certain that he would not long remain deficient in any of theſe; we ſhould know that he would overtake and ſurpaſs a competitor who had only been technically taught, as certainly as that the giant would overtake the panting dwarf, who might have many miles the ſtart of him in the race. We do not mean to ſay, that a boy ſhould not be taught the principles of grammar, and ſome knowledge of geography, at the ſame time that his underſtanding is cultivated in the moſt enlarged manner: theſe objects are not incompatible, and we particularly recommend it to *parents who intend to ſend their children to ſchool*, early to give them confidence in themſelves by ſecuring the rudiments of literary education; otherwiſe their pupils, with a real ſuperiority

of underſtanding, may feel depreſſed, and may perhaps be deſpiſed, when they mix at a public ſchool with numbers who will eſtimate their abilities merely by their proficiency in particular ſtudies.

Mr. Frend*, in recommending the ſtudy of arithmetic for young people has very ſenſibly remarked, that boys bred up in public ſchools are apt to compare themſelves with each other merely as claſſical ſcholars; and, when they afterwards go into the world excellent Greek and Latin ſcholars, are much aſtoniſhed to perceive, that many of the companions whom they had undervalued at ſchool, get before them when they come to actual buſineſs, and to active life. Many in the purſuit of their claſſical ſtudies have neglected all other knowledge, eſpecially that of arithmetic, that uſeful eſſential branch of knowledge, without which neither the abſtract ſciences nor practical arts can be taught. The preciſion which the habit of applying the common rules of arithmetic gives to the underſtanding, is highly advantageous, particularly

* V. Mr. Frend's Principles of Algebra.

to young people of vivacity, or, as others would ſay, of genius. The influence which the habit of *eſtimating* has upon that part of the moral character called prudence, is of material conſequence. We ſhall further explain upon this ſubject when we ſpeak of the means of teaching prudence and reaſoning to children; we only mention the general ideas here, to induce intelligent parents to attend early to theſe particulars. If they mean to ſend their children to public claſſical ſchools, it muſt be peculiarly advantageous to teach them early the rudiments of arithmetic, and to give them the habit of applying their knowledge in the common buſineſs of life. We forbear to enumerate other branches of knowledge with which young people might be familiariſed before they leave home, becauſe we do not wiſh to alarm with perplexing variety. One thing well taught, is better than a hundred taught imperfectly.

The effect of the pains which are taken in the firſt nine or ten years of a child's life, may not be apparent immediately to the view, but it will gradually become viſible. To careleſs

obſervers, two boys of nine years old, who have been very differently educated, may appear nearly alike in abilities, in temper, and in the promiſe of future character. Send them both to a large public ſchool, let them be placed in the ſame new ſituation, and expoſed to the ſame trials, the difference will then appear; the difference in a few years will be ſuch as to ſtrike every eye, and people will wonder what can have produced in ſo ſhort a time ſuch an amazing change. In the Hindoo art of dyeing, the ſame liquors communicate different colours to particular ſpots, according to the ſeveral baſes previouſly applied; to the ignorant eye no difference is diſcernible in the ground, nor can the deſign be diſtinctly traced till the air, and light, and open expoſure, bring out the bright and permanent colours to the wondering eye of the ſpectator.

Beſides beſtowing ſome attention upon early education, parents, who ſend their children to ſchool, may much aſſiſt the public preceptor by judicious conduct towards children during that portion of the year which is uſually ſpent at

home*. Miſtaken parental fondneſs delights to make the period of time which children ſpend at home as ſtriking a contraſt as poſſible with that which they paſs at ſchool. The holy-days are made a jubilee, or rather reſemble the Saturnalia. Even if parents do not wiſh to repreſent a ſchoolmaſter as a tyrant, they are by no means diſpleaſed to obſerve, that he is not the friend or favourite of their children. They put themſelves in mean competition with him for their affection, inſtead of co-operating with him in all his views for their advantage. How is it poſſible, that any maſter can long retain the wiſh or the hope of ſucceeding in any plan of education, if he perceives that his pupils are but partially under his government, if his influence over their minds be counteracted from time to time by the ſuperior influence of their parents? An influence which he muſt not wiſh to deſtroy. To him is left the power to puniſh, it is true; but parents reſerve to themſelves the privilege to reward. The ancients did not ſuppoſe, that even Jupiter could govern the world

* V. Williams's Lectures on Education.

without the command of pain and pleaſure.—Upon the vaſes near his throne depended his influence over mankind.

And what are theſe holyday delights? And in what conſiſts parental rewards? In diſſipation and idleneſs. With theſe are conſequently aſſociated the idea of happineſs and the name of pleaſure; the name is often ſufficient, without the reality. During the vacation children have a glimpſe of what is called *the world*; and then are ſent back to their priſon with heads full of viſions of liberty, and with a ſecond-ſight of the bleſſed lives which they are to lead when they have left ſchool for ever. What man of ſenſe, who has ſtudied the human mind, who knows that the ſucceſs of any plan of education muſt depend upon the concurrence of every perſon, and every circumſtance, for years together, to the ſame point, would undertake any thing more than the partial inſtruction of pupils, whoſe leading aſſociations and habits muſt be perpetually broken? When the work of ſchool is undone during the holydays, what hand could have the patience perpetually to repair the web?

During the vacations ſpent at home children may be made extremely happy in the ſociety and in the affections of their friends, but they need not be taught that idleneſs is pleaſure: on the contrary, occupation ſhould by all poſſible methods be rendered agreeable to them; their ſchool acquiſitions, their knowledge and taſte ſhould be drawn out in converſation, and they ſhould be made to feel the value of what they have been taught; by theſe means there would be ſome connection, ſome unity of deſign, preſerved in their education. Their ſchoolmaſters and tutors ſhould never become the theme of inſipid ridicule; nor ſhould parents ever put their influence in competition with that of a preceptor: on the contrary, his pupils ſhould uniformly perceive that from his authority there is no appeal, except to the ſuperior power of reaſon, which ſhould be the avowed arbiter to which all ſhould be ſubmitted.

Some of the dangerous effects of that mixed ſociety at ſchools, of which we have complained, may be counteracted by the judicious conduct of parents during the time which children

ſpend at home. A better view of ſociety, more enlarged ideas of friendſhip and of juſtice, may be given to young people, and the vile principle of party ſpirit may be treated with juſt contempt and ridicule. Some ſtandard, ſome rules may be taught to them, by which they may judge of character independently of prejudice, or childiſh prepoſſeſſion.

> " I do not like you, Doctor Fell;
> " The reaſon why I cannot tell:
> " But this I know full well,
> " I do not like you, Doctor Fell"—

is an exact ſpecimen of the uſual mode of reaſoning, of the uſual method in which an ill educated ſchoolboy expreſſes his opinion and feelings about all perſons, and all things. "The " reaſon why," ſhould always be inquired whenever children expreſs preference or averſion.

To connect the idea of childhood with that of inferiority and contempt, is unjuſt and impolitic; it ſhould not be made a reproach to young people to be young, nor ſhould it be pointed out to them, that when they are ſome years older they will be more reſpected; the

degree of reſpect which they really command, whether in youth or age, will depend upon their own conduct, their knowledge, and their powers of being uſeful and agreeable to others. If they are convinced of this, children will not at eight years old long to be fifteen, nor at fifteen to be one and twenty; proper ſubordination would be preſerved, and the ſcale of happineſs would not have a forced and falſe connection with that of age. If parents did not firſt excite fooliſh wiſhes in the minds of their children, and then imprudently promiſe that theſe wiſhes ſhall be gratified at certain periods of their exiſtence, children would not be impatient to paſs over the years of childhood; thoſe years which idle boys wiſh to paſs over as quickly as poſſible, men without occupation regret as the happieſt of their exiſtence. To a child, who has been promiſed that he ſhall put on manly apparel on his next birth-day, the ſpace of time is ſlow and heavy until that happy æra arrive. Fix the day when a boy ſhall leave ſchool, and he wiſhes inſtantly to mount the chariot, and laſh the horſes of the ſun. Nor

when he enters the world, will his reſtleſs ſpirit be ſatisfied; the firſt ſtep gained, he looks anxiouſly forward to the height of manly elevation,

"And the briſk minor pants for twenty-one."

Theſe juvenile anticipations diminiſh the real happineſs of life; thoſe who are in continual expectation never enjoy the preſent; the habit of expectation is dangerous to the mind, it ſuſpends all induſtry, all voluntary exertion. Young men, who early acquire this habit, find exiſtence inſipid to them without the immediate ſtimuli of hope and fear: no matter what the object is, they muſt have ſomething to ſigh for; a curricle, a cockade, or an opera-dancer.

Much may be done by education to prevent this boyiſh reſtleſſneſs. Parents ſhould refrain from thoſe imprudent promiſes, and ſlight inuendoes which the youthful imagination always miſunderſtands and exaggerates. Never let the moment in which a young man quits a ſeminary of education, be repreſented as a moment in which all inſtruction, labour, and reſtraints,

ceaſe. The idea, that he muſt reſtrain and inſtruct himſelf, that he muſt complete his own education, ſhould be excited in a young man's mind; nor ſhould he be ſuffered to imagine that his education is finiſhed, becauſe he has attained to ſome given age.

When a common ſchoolboy bids adieu to that ſchool which he has been taught to conſider as a priſon, he exults in his eſcape from books and maſters, and from all the moral and intellectual diſcipline, to which he imagines that it is the peculiar diſgrace and miſery of childhood to be condemned. He is impatient to be thought a man, but his ideas of the manly character are erroneous, conſequently his ambition will only miſlead him. From his companions whilſt at ſchool, from his father's acquaintance, and his father's ſervants, with whom he has been ſuffered to conſort during the vacations, he has collected imperfect notions of life, faſhion, and ſociety. Theſe do not mix well in his mind with the examples and precepts of Greek and Roman virtue: a temporary enthuſiaſm may have been kindled in his ſoul by the eloquence

of antiquity; but, for want of ſympathy, this enthuſiaſm neceſſarily dies away. His heroes are not the heroes of the preſent times; the maxims of his ſages are not eaſily introduced into the converſation of the day. At the tea table he now ſeldom hears even the name of Plato; and he often bluſhes for not knowing a line from a popular Engliſh poet, whilſt he could repeat a cento from Horace, Virgil, and Homer; or an antiſtrophe from Æſchylus or Euripides. He feels aſhamed to produce the knowledge he has acquired, becauſe he has not learned ſufficient addreſs to produce it without pedantry. On his entrance into the world there remains in his mind no grateful, no affectionate, no reſpectful remembrance of thoſe under whoſe care he has paſſed ſo many years of his life. He has eſcaped from the reſtraints impoſed by his ſchoolmaſter, and the connexion is diſſolved for ever.

But when a ſon ſeparates from his father, if he has been well educated, he wiſhes to continue his own education: the courſe of his ideas are not ſuddenly broken; what he has been,

joins immediately with what he is to be; his knowledge applies to real life, it is ſuch as he can uſe in all companies; there is no ſudden metamorphoſis in any of the objects of his ambition; the boy and man are the ſame individual. Pleaſure will not influence him merely by her name, or by the contraſt of her appearance with the rigid diſcipline of ſcholaſtic learning; he will feel the difference between pleaſure and happineſs, and his early taſte for domeſtic life will remain or return upon his mind. His old precepts and new motives are not at war with each other, his experience will confirm his education, and external circumſtances will call forth his latent virtues. When he looks back he can trace the gradual growth of his knowledge, when he looks forward it is with the delightful hope of progreſſive improvement. A deſire in ſome degree to repay the care, to deſerve the eſteem, to fulfil the animating prophecies, or to juſtify the fond hopes of the parent who has watched over his education, is one of the ſtrongeſt motives to an ingenuous young man; it is an incentive to exer-

tion in every honourable purſuit. A ſon who has been judiciouſly and kindly educated, will feel the value of his father's friendſhip. The perception that no man can be more entirely intereſted in every thing that concerns him, the idea that no one more than his father can ſhare in his glory or in his diſgrace, will preſs upon his heart, will reſt upon his underſtanding. Upon theſe ideas, upon this common family intereſt, the real ſtrength of the connexion between a father and his ſon depends. No public preceptor can have the ſame advantages; his connexion with his pupil is not neceſſarily formed to laſt.

After having ſpoken with freedom, but we hope with moderation, of public ſchools, we may perhaps be aſked our opinion of univerſities. Are univerſities the moſt ſplendid repoſitories of learning? We are not afraid to declare an opinion in the negative. Smith, in his Wealth of Nations, has ſtated ſome objections to them, we think with unanſwerable force of reaſoning. We do not however wiſh to deſtroy what we do not entirely approve. Far

be that infanity from our minds which would, like Orlando, tear up the academic groves; the madneſs of innovation is as deſtructive as the bigotry of ancient eſtabliſhments. The learning and the views of the riſing century muſt have different objects from thoſe of the wiſdom and benevolence of Alfred, Belſham, or Wolſey; and without depreciating or deſtroying the magnificence or eſtabliſhments of univerſities, may not their inſtitutions be improved? May not their ſplendid halls echo with other ſounds than the exploded metaphyſics of the ſchools; and may not other learning be as much rewarded and eſteemed as pure *latinity?*

We muſt here diſtinctly point out, that young men deſigned for the army or the navy ſhould not be educated in private families. The domeſtic habits, the learned leiſure of private education, are unſuited to them; it would be abſurd to waſte many years in teaching them the elegancies of claſſic literature, which can probably be of no eſſential uſe to them; it would be cruel to give them a nice and refined choice of right and wrong, when it will be

their profeſſional duty to act under the command of others; when implicit, prompt, unqueſtioning obedience muſt be their firſt military virtue. Military academies, where the ſciences practically eſſential to the profeſſions are taught, muſt be the beſt ſituations for all young ſailors and ſoldiers; ſtrict inſtitution for them is the beſt education. We do not here inquire how far theſe profeſſions are neceſſary in ſociety; it is obvious that in the preſent ſtate of European cultivation, ſoldiers and ſailors are indiſpenſable to every nation. We hope, however, that a taſte for peace may, at ſome future period in the hiſtory of the world, ſucceed to the paſſion for military glory; and in the mean time, we may ſafely recommend it to parents, never to truſt a young man deſigned for a ſoldier to the care of a philoſopher, even if it were poſſible to find one who would undertake the charge.

We hope that we have ſhewn ourſelves the friends of the public preceptor, that we have pointed out the practicable means of improving public inſtitutions by parental care and parental

co-operation. But until ſuch a meliorating plan ſhall actually have been carried into effect, we cannot heſitate to aſſert, that even when the abilities of the parent are inferior to thoſe of the public preceptor, the means of enſuring ſucceſs preponderate in favour of private education. A father, who has time, talents, and temper, to educate his family, is certainly the beſt poſſible preceptor, and his reward will be the higheſt degree of domeſtic felicity. If from his ſituation he is obliged to forego this reward, he may ſelect ſome men of literature, ſenſe, and integrity, to whom he can confide his children. Opulent families ſhould not think any reward too munificent for ſuch a private preceptor. Even in an economic point of view, it is prudent to calculate how many thouſands laviſhed on the turf, or loſt at the gaming table, might have been ſaved to the heirs of noble and wealthy families by a judicious education.

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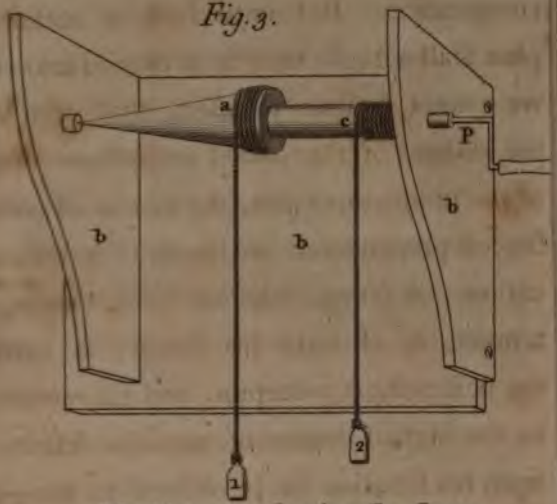
Fig. 3.



Machine for shewing the Laws of accelerated Motion

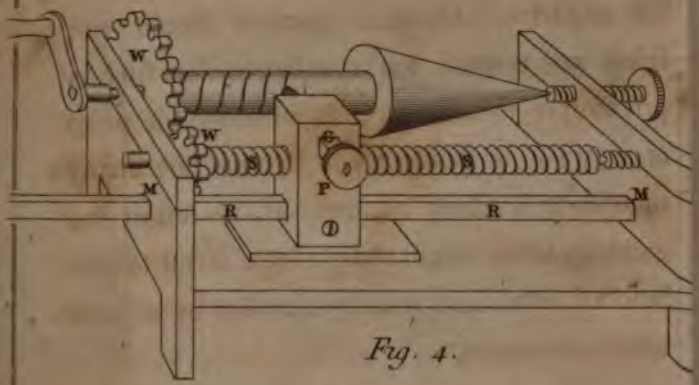
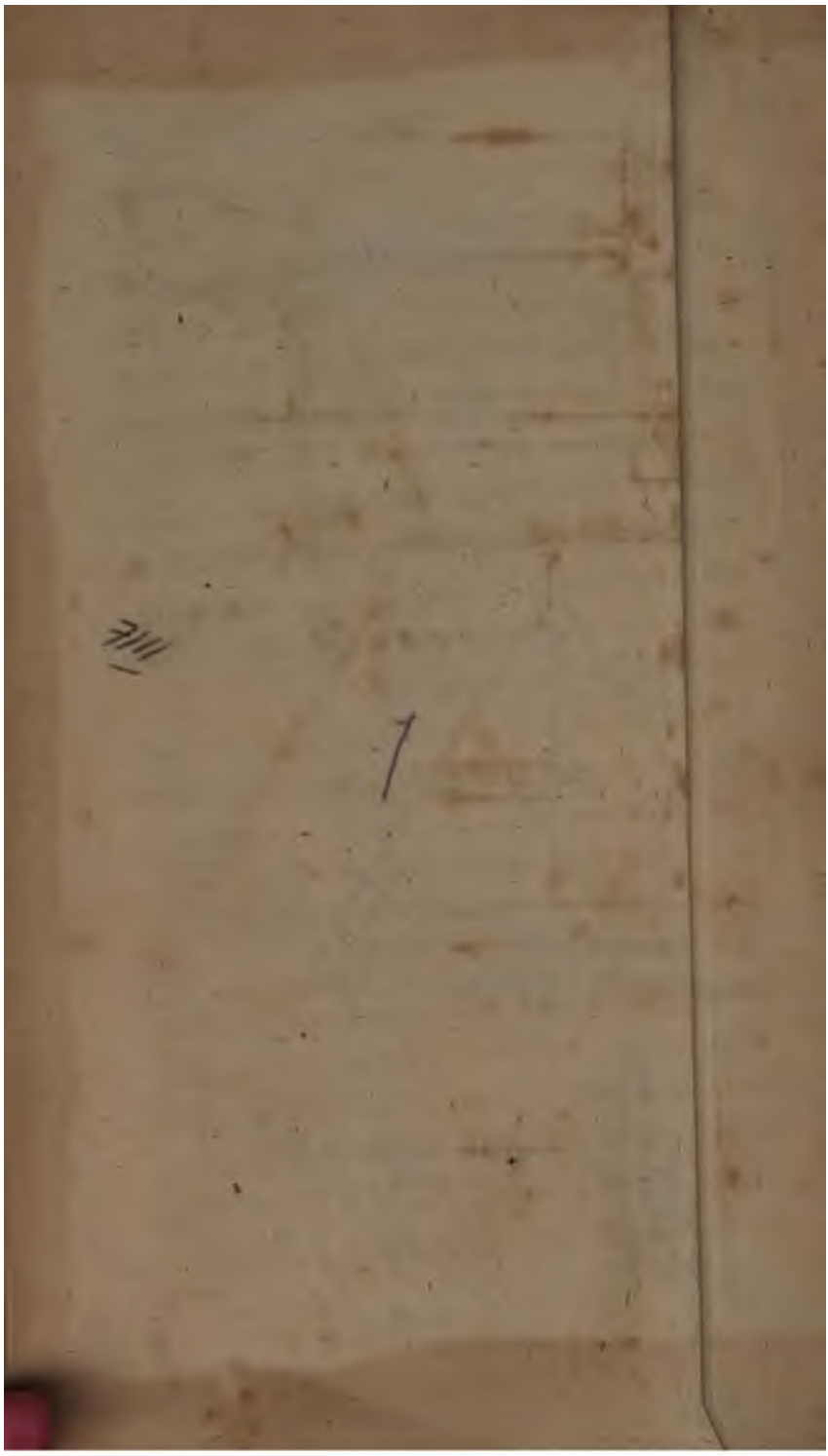


Fig. 4.

Machine for cutting Spiral Grooves



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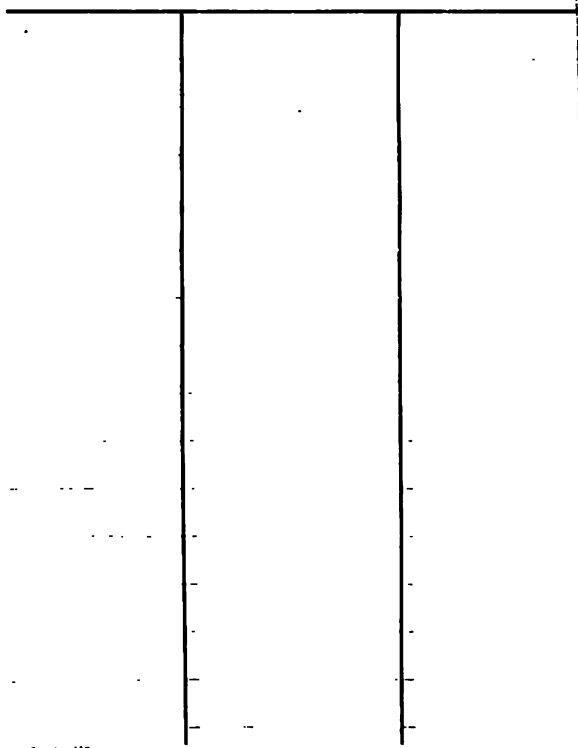

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